SONY

VIDEO PRESENTATION STAND

VID-P110

SERVICE MANUAL

1st Edition

⚠ WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠ 警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用下さい。

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SONY

3-864-452-**11(1)**

Video Presentation Stand

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VID-P110

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SECTION 1
OPERATING INSTRUCTIONS

This section is extracted from operation manual.

Owner's Record

The model and serial numbers are located on the rear of the unit. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. VID-P110 Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

WARNING

For the customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the customers in Canada

This Class A digital apparatus complies with Canadian ICES-003.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

WARNING
THIS APPARATUS MUST BE EARTHED

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

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Introduction

The VID-P110 Video Presentation Stand allows you to display visual materials such as paper-based documents, transparent sheets, slides, film negatives, and solid objects on a color monitor or projector by shooting them with a color video camera.

Features

The VID-P110 has the following features.

Easy to connect

Visuals can be displayed by simply connecting a color monitor because the camera, lens, light, and power supply are all incorporated in one unit.

Sharp screen

The 380,000 (for the NTSC model) or 440,000 (for the PAL model) pixels of the 1/3-inch CCD pickup device allow 460 (for the NTSC model) or 450 (for the PAL model) horizontal resolution TV lines producing high screen resolution. An S VIDEO OUT connector allows you to connect a monitor or projector equipped with an S VIDEO IN connector, thus giving you even higher screen resolution.

Easy to adjust

The arm lights turn on and the focus, iris and white balance adjust automatically after power-on. You can also adjust each setting manually depending on the picture you want to display.

Quick response auto focus

When the inner focus lens is used, it can correctly adjust focus position in only 1 or 2 seconds.

12 × power zoom lens

The 12 × power zoom lens allows you to display various materials ranging in size from a 1 3/16" × 7/8" (29 × 22 mm) to a 12 7/8" × 9 1/2" (325 × 240 mm) sheet on the screen.

Pattern memory

Two pattern settings can be set. The pattern memory function memorizes the zoom, focus, iris, white balance, lighting and effect (black & white, negative) settings. To recall the pattern memory, press the button you preset.

Tilting and panning mechanism

By tilting the camera upwards through 90 degrees and moving it from left to right, you can pan and/or tilt the camera to shoot material pasted on the wall or even yourself.

Easily removable close-up lens

After tilting up the camera, you can easily remove the close-up lens by revolving it.

Various materials can be shot and displayed

Various materials from paper-based documents and transparent sheets to slides, film negatives and solid objects can be shot and displayed.
To shoot and display film negatives, just press the appropriate button to change the lighting to the back light and setting for displaying film negatives.

Built-in back light

The large-sized built-in back light allows the A4-sized object such as transparent sheets, slides or film negatives to be shot and displayed on a monitor. To use the back light, just press a button.

Built-in video selector

A video selector is incorporated in this unit. It allows you to switch the pictures shot with this unit to those from the connected video equipment such as a VCR and laserdisc player and vice versa.

Sound mixing function

You can add a running commentary simply by connecting a microphone and a monitor with speakers. In addition, existing audio signals can be mixed with the audio signal from the microphone, so you can add a commentary while displaying video signals via the built-in video selector on a monitor.

Various output style

A Y/C separator is incorporated in this unit. It allows you to output the video signal to either VIDEO OUT or S VIDEO OUT regardless of the input video signal from VIDEO IN or S VIDEO IN.

External control from a computer

An RS-232C interface is provided with this unit. This interface allows the unit to be controlled from an external computer. However, the software to control the VID-P110 must first be installed. Refer to the “Interface Manual” for details on the commands and communication protocol for this software.

Easy to transport

The unit can be collapsed so easily and weighs so little that it can be carried with no trouble, allowing you to make a presentation anywhere.

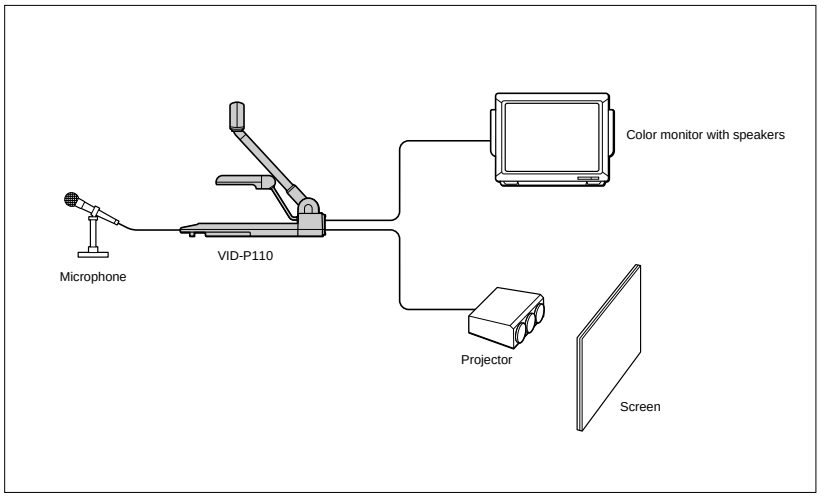
Accessory shoe for an LCD (liquid crystal display) monitor

This unit has an accessory shoe for attaching an LCD monitor. You can use this monitor to conveniently confirm your view by attaching it to the accessory shoe.

System Configuration

Basic configuration

The basic system for making a presentation or displaying educational materials is as follows:

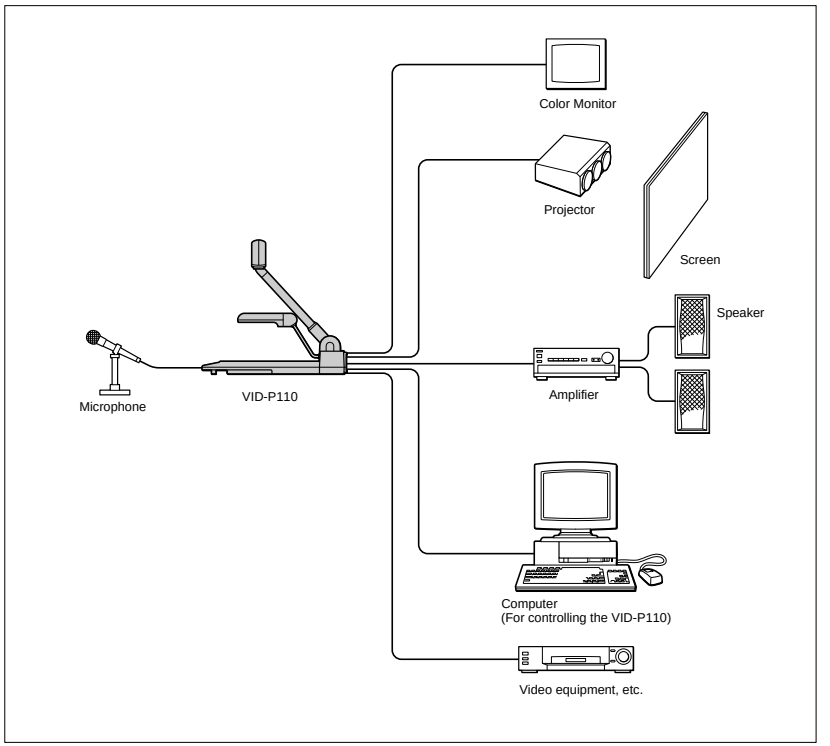


Advanced system

When you connect video equipment such as a VCR or laserdisc player to this unit, you can switch the picture/sound to those from the connected video equipment, and vice versa by using the VIDEO OUT buttons. When you connect a computer, you can control the VID-P110 from the computer.

Note

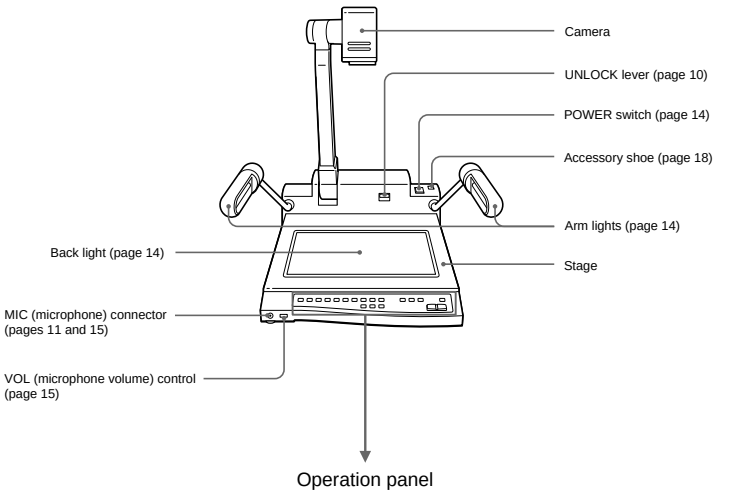
When you control the VID-P110 from a computer, special software is required. To program in this software, refer to the “Interface Manual”.



Parts Identification

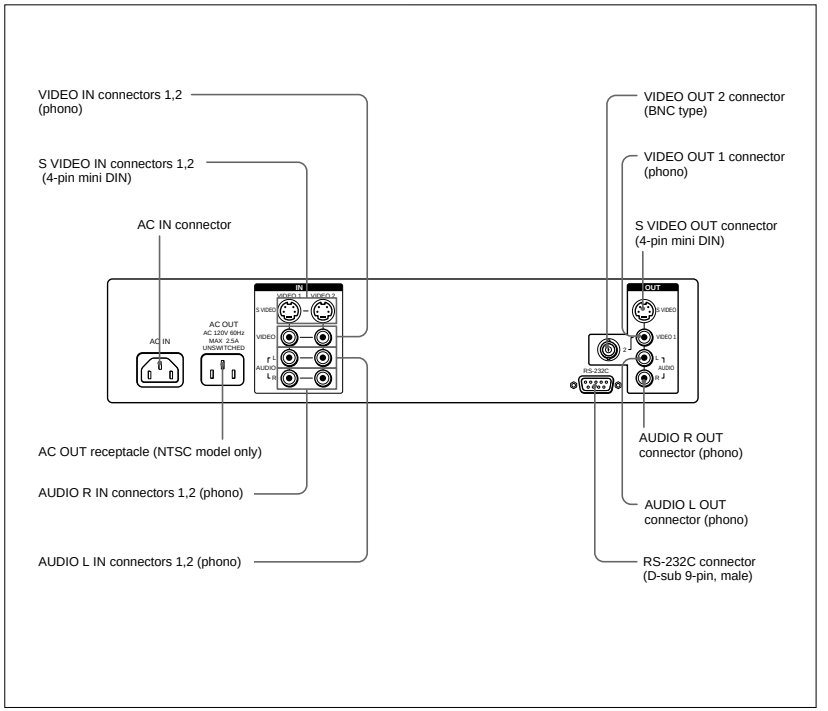
For details on the use of each part, see the pages indicated in parentheses.

Camera and Operation Panel



Rear Panel

For details on the use of the connectors, see pages 11 and 12.



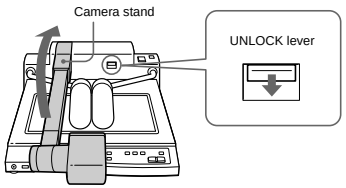
Preparation

Precautions

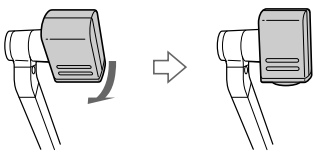
- Unplug the VID-P110 from the wall outlet when it is not being used for a long period of time. To disconnect the cord, pull it out by grasping the plug. Never pull it out by the cord itself.
- The fluorescent lamps can get hot during operation. Do not touch the lamps during operation and when collapsing the VID-P110.
- Clean the cabinet with a soft cloth lightly moistened with a mild detergent solution. Never use any type of solvent such as alcohol or benzine, which might damage the finish.
- Clean the lens with an air spray or soft dry cloth, taking care not to scratch it.
- When the fluorescent lamps flash or get darkened, the fluorescent lamps should be replaced with new ones. In this case, contact your Sony dealer.

Setting Up the Unit

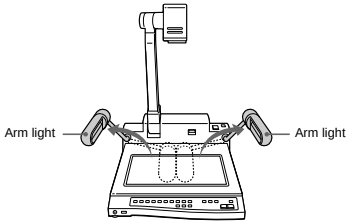
1 Lift up the camera stand while keeping the UNLOCK lever pressed down.



2 Adjust the camera to the direction shown by the arrow so that the lens faces downwards.



3 Open both arm lights until they fix in place.



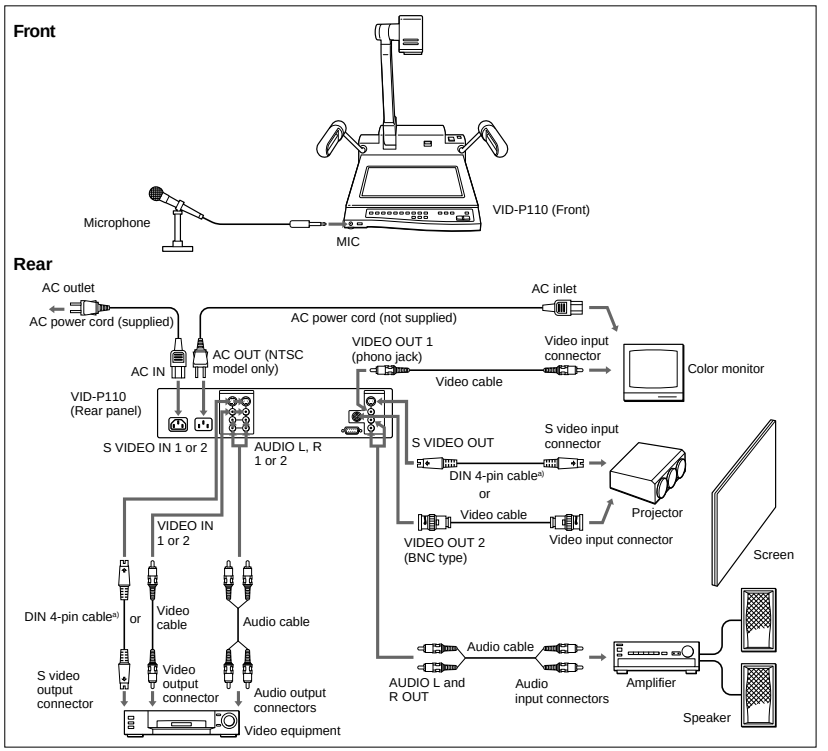
4 Connect the power cord to the AC IN connector on the rear panel.

Connecting the Unit to Other Equipment

Notes on connections

- Before making any connections, turn off the power of the VID-P110 and the equipment to be connected.
- For NTSC model only: Before connecting a device such as a monitor to the VID-P110 AC OUT receptacle, check to see if the power consumption is 2.5 A or less. Do not connect any device whose power consumption is over 2.5 A to the VID-P110.

Example of connections to this unit

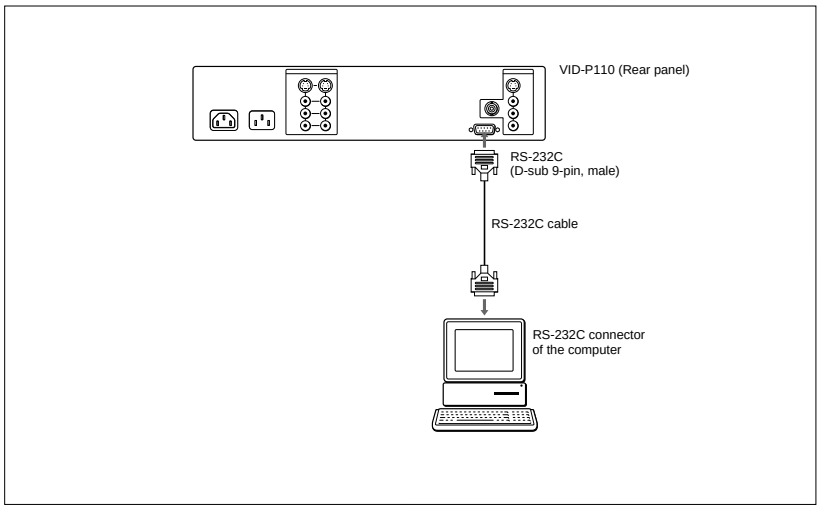


a) **Note**

It is recommended that you use the DIN 4-pin cable when you connect this unit to the equipment with an S video input or output connector.

Connections for external control from a computer

After performing the connections on the previous page, make the connections shown below to control this unit from the connected computer.



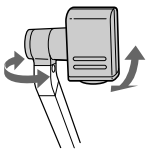
Note

When you control the VID-P110 from a computer, special software is required. To program in this software, refer to the “Interface Manual”.

Adjusting the Parts

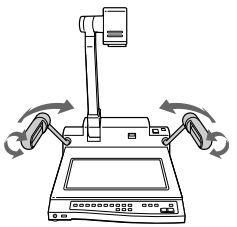
Adjusting the camera

When the picture is not upright, rotate the camera up and down and move it from left to right to adjust.



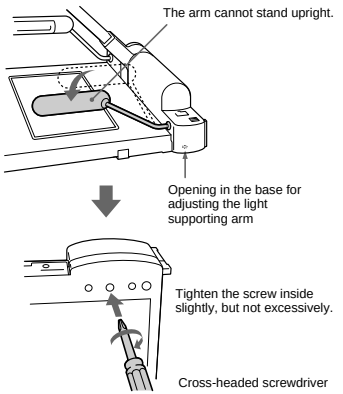
Adjusting the arm lights

Adjust the angle of the arm lights depending on the object.



If the light supporting arms loosen

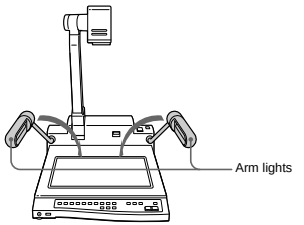
If the arms will not stay upright, the screw in the base may be loose. After turning off the POWER switch, tighten the screw as shown below.


The arm cannot stand upright.
Opening in the base for adjusting the light supporting arm
Tighten the screw inside slightly, but not excessively.
Cross-headed screwdriver

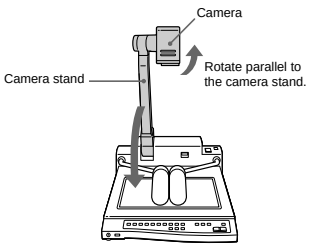
Collapsing the Unit

Follow the instructions below to collapse the VID-P110 for transportation or convenience.

1 Fold both arm lights down onto the base.

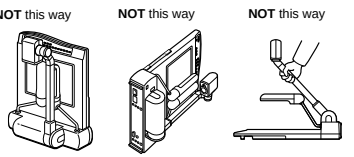


2 Rotate the camera parallel to the camera stand. Carefully fold down the camera stand toward the operation panel side until it locks.



Cautions

- Lay the unit down flat. Do not try to stand it on its rear or sides. Doing so may cause the unit to fall resulting in damage or personal injury.
- Do not try to pick up this unit by the camera stand. This may cause the unit to malfunction, and may cause you injury.



Operations

This section explains two things: the basic operation for displaying normal materials and the advanced operation for displaying special materials such as film negatives.

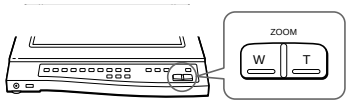
Basic Operation

Turning on the power (POWER switch)

Press the POWER switch to turn on the power. The VID-P110 automatically turns on the arm lights, adjusts the focus, iris (brightness), and white balance. While adjusting the settings, the CAMERA indicator flashes for about 6 seconds and you cannot operate the ZOOM, FOCUS, IRIS or W.BALANCE buttons. When the VID-P110 finishes adjusting the settings, the CAMERA indicator light stays on and now you can use this unit.
The only thing left to do is to zoom the image on the screen to display a normal document.

Zooming the image on the screen (ZOOM buttons)

To zoom into or out from the image on the screen, use the ZOOM buttons on the operation panel.
To zoom out from the image for panoramic long shots, press the W (wide-angle) button. To zoom into the image for close-ups, press the T (telephoto) button.
The VID-P110 offers two levels of speed zooming. Press the button firmly for high speed zooming and softly for slower zooming.

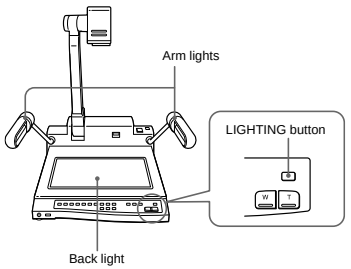


Switching the lighting (LIGHTING button)

The arm lights turn on automatically when the power is switched on. Each time you press the LIGHTING button, the lighting changes as follows.

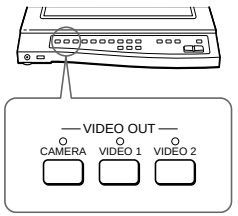
The back light turns on.
↓
All the lights turn off.
↓
The arm lights turn on.

When shooting and displaying transparencies such as transparent sheets, slides and film positive, press the LIGHTING button to switch the light from the arm lights to the back light.
When you press the LIGHTING button repeatedly, wait 1 second before you press the LIGHTING button again.



Selecting the signals to output (VIDEO OUT buttons)

The VIDEO OUT buttons on the operation panel allow you to switch the pictures shot with this unit to those from the connected video equipment and vice versa.



To output the video signal from the VID-P110 camera and the audio signal from the microphone connected to the MIC connector
Press the CAMERA button. The video signal from the camera of the VID-P110 and the audio signal from the microphone connected to the MIC connector are automatically output.
When turned on, the video signal from the camera is automatically output.

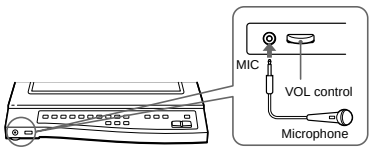
To output a signal from the video equipment connected to the VID-P110
Press the VIDEO 1 or VIDEO 2 button.
The VIDEO IN connectors on the rear panel are interlocked to the VIDEO buttons, the VIDEO IN 1 connector to the VIDEO 1 button and the VIDEO IN 2 connector to the VIDEO 2 button.
When the microphone is connected, this unit outputs sound by mixing the audio signal from the AUDIO IN connectors with the audio signal from the microphone. When you want to switch the video signal from the input connectors to the camera, press the CAMERA button.

Note

When you connect video equipment to both the S VIDEO IN 1 connector and the VIDEO IN 1 connector on the rear panel, the video signal from the S VIDEO IN 1 connector is automatically output. It is the same when you connect both the VIDEO IN 2 and S VIDEO IN 2 connectors.

Adjusting the microphone level (VOL control)

Use the VOL control on the front of the VID-P110 to adjust the level of the microphone connected to the MIC connector. Turn it to the right to increase the volume. Turn it to the left to decrease the volume.



Advanced Operation

Adjusting the image to your taste

The VID-P110 automatically adjusts the focus, iris and white balance when you turn on the power and set the material to be displayed in the middle of the screen. You can also adjust them yourself manually as you wish.

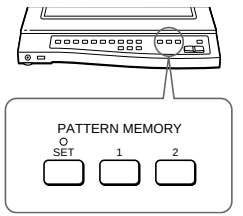
Presetting the pattern memory (PATTERN MEMORY buttons)

The PATTERN MEMORY buttons on the operation panel allow you to preset two pattern settings. The pattern memory function memorizes the zoom, focus, iris, white balance, lighting and effect (black & white, negative) settings. Once you have preset the pattern memory for an object you use often, you can recall the pattern memory by pressing the button you preset.

1 Adjust the zoom, focus, iris, white balance, lighting and effect (black & white, negative) settings.

2 Press the PATTERN MEMORY SET button.

3 Press the PATTERN MEMORY 1 or 2 button while the PATTERN MEMORY SET indicator is flashing fast (for about 5 seconds).
The PATTERN MEMORY SET indicator lights for about 2 seconds and then turns off. If the PATTERN MEMORY SET indicator does not light for about 2 seconds, the setting may not have been memorized. In this case, repeat steps **1** to **3**.



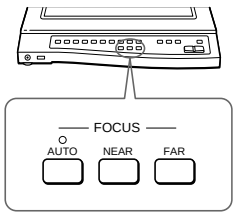
To recall the setting you preset
Press the PATTERN MEMORY 1 or 2 button.

Note
The setting you preset will be reset when you turn off the power.

Adjusting the focus manually (FOCUS buttons)

Use the FOCUS buttons on the operation panel to adjust the focus. You can also adjust the focus for a three-dimensional object by using the NEAR and FAR buttons. Adjust the focus manually when you display:
- a material that includes small type or fine patterns which are difficult to focus,
- a material of low contrast, or
- a three-dimensional object.

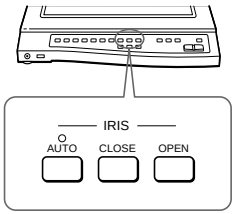
You can lock the focus when the focus is adjusted automatically. Press the FAR or NEAR button once to lock the focus.



To go back to automatic focus
Press the AUTO button to light the AUTO indicator.

Adjusting the iris (Brightness) manually (IRIS buttons)

Use the IRIS buttons on the operation panel to adjust the iris (brightness). To increase the brightness, press the OPEN button. To decrease the brightness, press the CLOSE button. Adjust the iris manually when you want to display:
- an object which reflects light strongly and the picture looks whitish,
- a pale-colored film negative, or
- the contrast strongly.

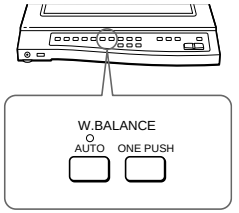


To go back to automatic iris
Press the AUTO button to light the AUTO indicator.

Locking the white balance setting (W.BALANCE buttons)

The VID-P110 automatically adjusts the white balance. You can lock the white balance setting when the object color is not displayed naturally. This is useful when you display:
- a monochromatic material (including film negatives) or background, or
- a pale colored material.

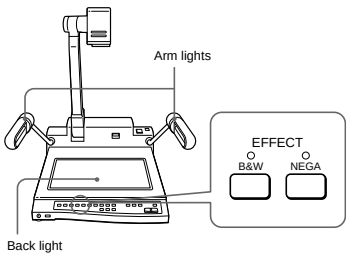
To lock the white balance setting, press the ONE PUSH button. The white balance setting which adjusts immediately before you pressed the button is held. In the ONE PUSH mode, it locks the last automatic white balance setting and maintains it even when the lighting conditions change. This allows the color of the material to be displayed naturally.



To go back to automatic white balance
Press the AUTO button to light the AUTO indicator when you change the object to be shot or the color of the material is not displayed naturally in the ONE PUSH mode. The VID-P110 unlock the white balance setting and adjust the white balance automatically.

Displaying film negatives (EFFECT buttons)

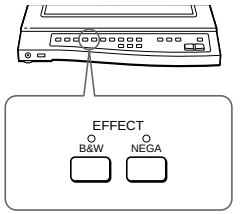
The VID-P110 is automatically set to display normal materials on the screen when you turn it on. Press the NEGA button on the operation panel to display the film negatives. The NEGA indicator above the button lights, and the arm lights go off and the back light comes on. The VID-P110 begins to display the reverse picture of the film negatives.
To display film negatives more naturally, see also “Locking the white balance setting (W.BALANCE buttons)” (page 16).



To display a normal material on the screen
Press the NEGA button when the NEGA indicator is lit. The NEGA indicator turns off and the arm lights turn on.

Setting the screen in monochrome mode (EFFECT buttons)

To set the screen in monochrome, press the B&W button. The B&W indicator lights to indicate that the screen is now set to monochrome. We recommend that you set the screen to monochrome when you display:
- a black and white material such as a black and white document or a black and white film, or
- a material which includes small type such as a newspaper and fine patterns.

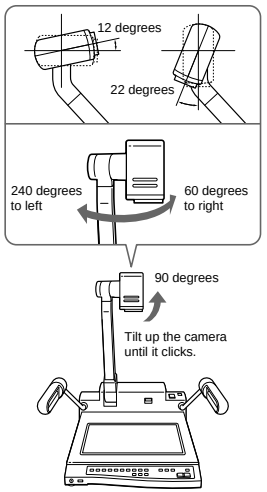


To set the screen in color
Press the B&W button again. The B&W indicator turns off and the screen is set to the normal color.

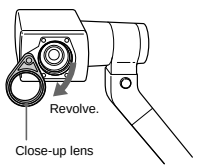
Note
When you shoot and display a finite pattern such as a column of newsprint, it is recommended to set the screen to monochrome and connect a monitor via the S VIDEO OUT connector.

Changing the camera direction

The VID-P110 allows you to tilt the camera upwards through 90 degrees, and move it from left to right, or up and down. Therefore, you can shoot and display the audience, students, or even yourself. To shoot an object far away from the VID-P110 itself, tilt up the camera and remove the close-up lens.

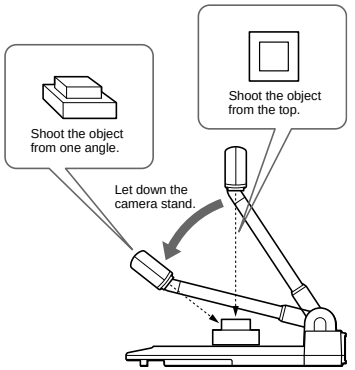


To remove the close-up lens



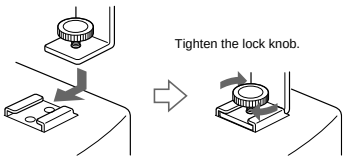
To shoot a three-dimensional object

To shoot and display a three-dimensional object, let down the camera stand. You can also shoot it from one angle.



Using the accessory shoe for an LCD monitor

This unit has an accessory shoe for attaching an LCD monitor.



Controlling the VID-P110 From a Computer

You can control the VID-P110 from a computer connected by an RS-232C connector. However, the software to control the VID-P110 must first be installed. Refer to the “Interface Manual” for details on the communication protocol for this software.

Specifications

Color system	NTSC or PAL color system
Pickup device	1/3" interline transfer method, CCD (Charge Coupled Device)
Resolution	NTSC model Horizontal: 460 TV lines Vertical: 350 TV lines PAL model Horizontal: 450 TV lines Vertical: 400 TV lines
Picture elements	380,000, 768 × 494 (H/V) (NTSC model) 440,000, 752 × 582 (PAL model)
Filming range	325 × 240 mm (at wide-angle) 29 × 22 mm (at telephoto)
Lens	12 × power zoom lens f = 5.4 to 64.8 mm (7/32 to 2 5/8 inches) F = 1.8 to 2.7
Zoom	Electrically powered (Two levels of speed zooming)
Focus	Auto/manual selectable
Iris	Auto/manual selectable
White balance	Auto/one push (fixed) selectable
Positive/negative film selection function	Possible
Monochrome/color selection function	Possible
Output signal selection	One output from three (CAMERA/VIDEO1/VIDEO2)
Light	Arm light: 9 W twin-fluorescent lamp × 2 Back light: 2.5 W cold cathode fluorescent lamp × 2
Input connectors	VIDEO IN (phone jack) (2) 1 Vp-p, 75 Ω, sync negative S VIDEO IN (4-pin mini DIN) (2) Y: 1 Vp-p, 75 Ω, sync negative C: 0.286 Vp-p, 75 Ω (NTSC model), 0.300 Vp-p, 75 Ω (PAL model) AUDIO IN L/R (phone jacks) (2 each) Input impedance: 47 kΩ Level: –10 dB, unbalanced MIC input (phone jack) (1) Input impedance: 3.3 kΩ Level: –60 dB, unbalanced
Output connectors	VIDEO OUT (BNC type) (1) 1 Vp-p, 75 Ω, sync negative VIDEO OUT (phone jack) (1) 1 Vp-p, 75 Ω, sync negative S VIDEO OUT (4-pin mini DIN) (1) Y: 1 Vp-p, 75 Ω, sync negative C: 0.286 Vp-p, 75 Ω (NTSC model), 0.300 Vp-p, 75 Ω (PAL model) AUDIO OUT L/R (phone jacks) (1 each) Output impedance: less than 600 Ω Level: –10 dB, unbalanced
RS-232C connector	D-sub, 9-pin, male
Power requirements	120 V AC, 60 Hz (NTSC model) 230 V AC, 50/60 Hz (PAL model)
AC output	AC OUT (auxiliary AC outlet) (NTSC model only) maximum 2.5 A/unswitched
Power consumption	120 V, 3 A (NTSC model) 0.3 A (PAL model)
Dimensions	After set up: Approximately 446 × 583 × 622 mm (w/h/d) (17 5/8 × 23 × 24 1/2 inches) After collapsed: Approximately 446 × 186 × 634 mm (w/h/d) (17 5/8 × 7 3/8 × 25 inches)
Mass	Approximately 8.0 kg (17 lb 10 oz)
Supplied accessories	AC power cord (1) Operation manual (1) Interface manual (1)

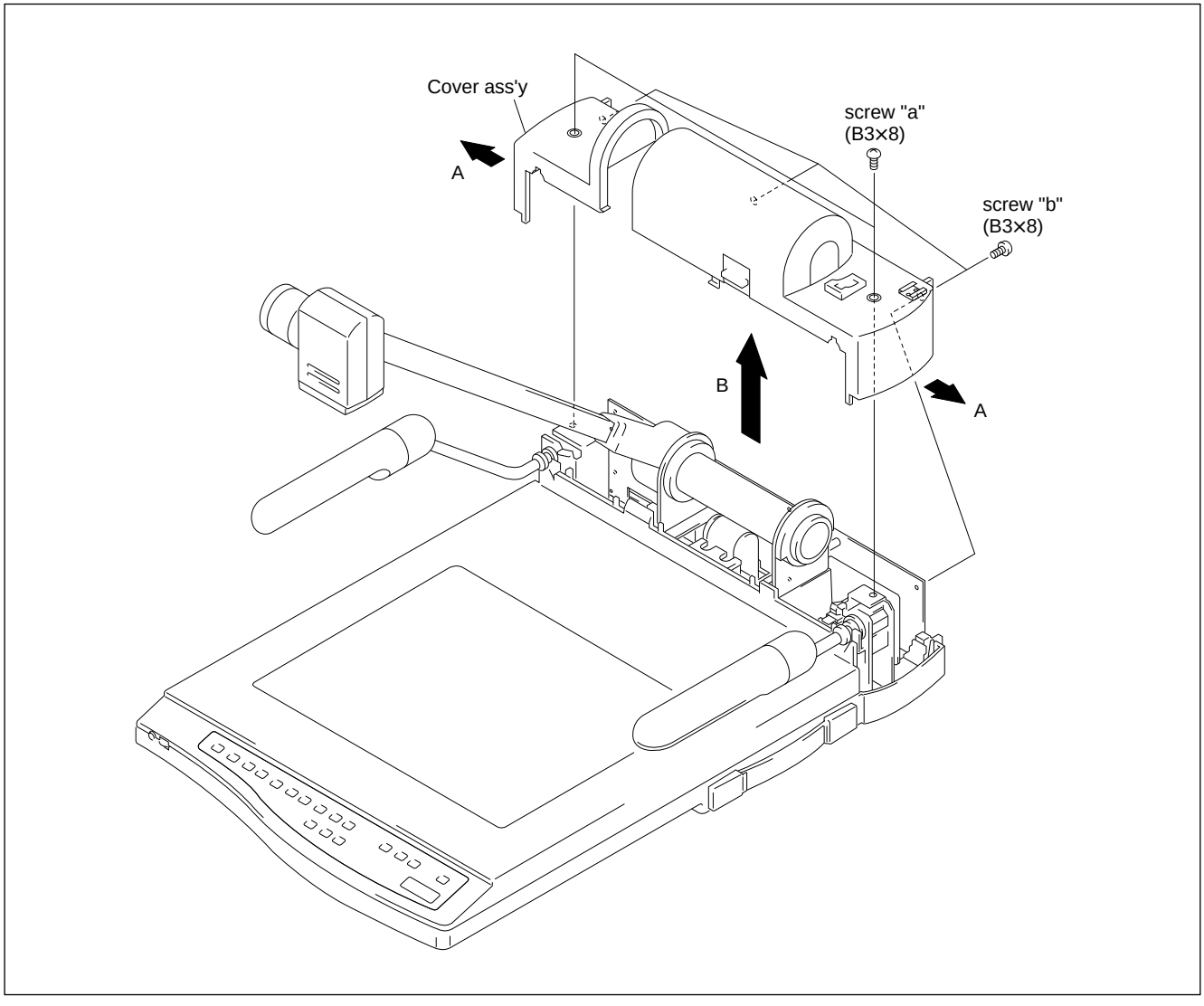
Design and specifications are subject to change without notice.

SECTION 2
SERVICE OVERVIEW

2-1. REMOVAL OF CABINET

2-1-1. Removal of Cover Ass'y

1. Remove two screws "a" (B3×6).
2. Remove three screws "b" (B3×6) and then remove cover ass'y in the direction of arrow "B" while widenning the cover in the directions of arrow "A"s.



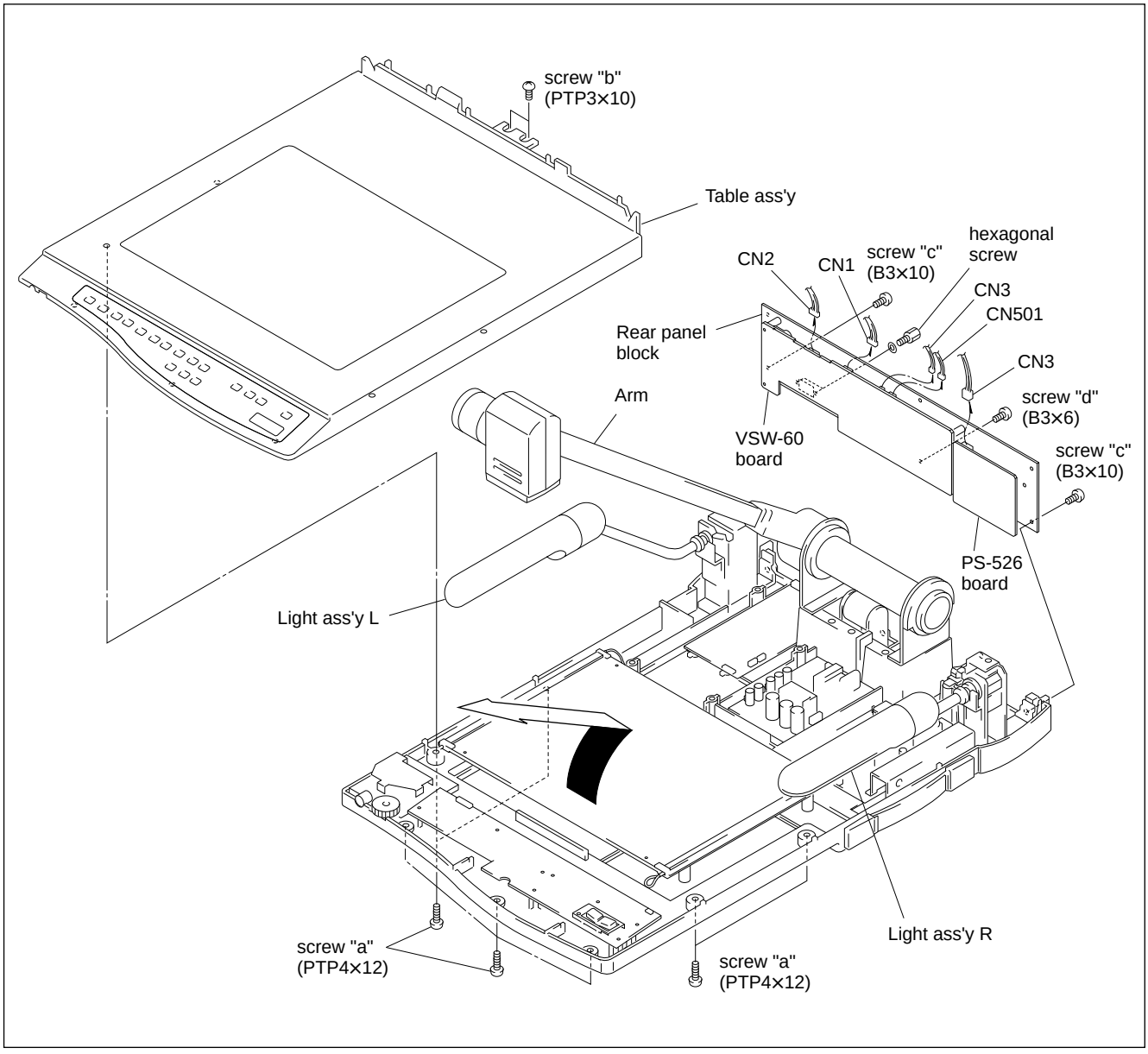
2-1-2. Removal of Table Ass'y and Rear Panel Block

Table Ass'y

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove seven screws "a" (PTP4×12) and two screws "b" (PTP3×10).
3. Move light ass'y L/R and arm to the position in figure.
4. Remove table ass'y in the direction of arrow.

Rear Panel Block

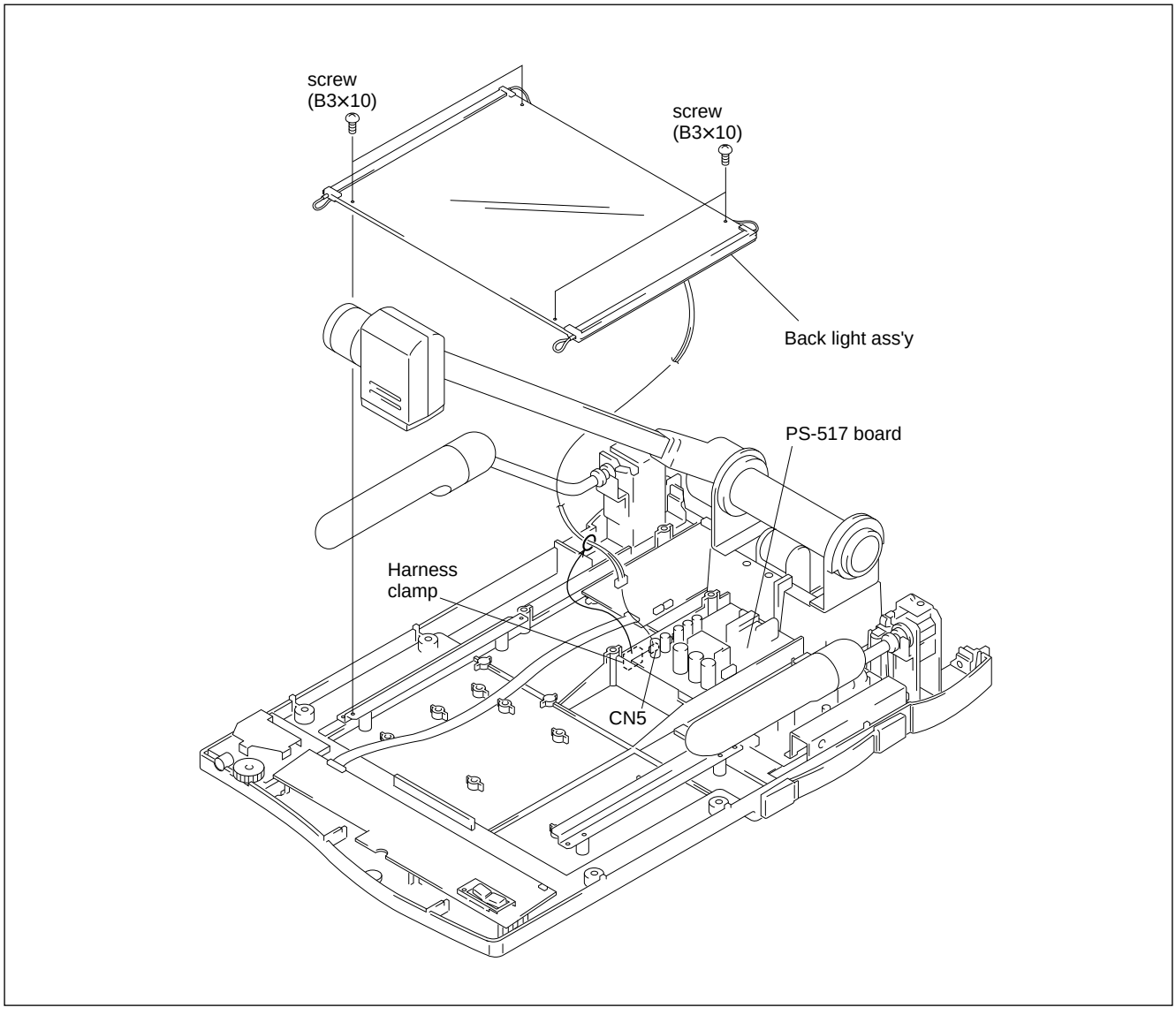
1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Disconnect four connectors (CN1, CN2, CN3, CN501) on VSW-60 board and one connector (CN3) on PS-526 board.
3. Remove two screws "c" (B3×10), one screw "d" (B3×6) and two hexagonal screws and then remove rear panel block.



2-2. REMOVAL OF MAIN PARTS

2-2-1. Removal of Back Light Ass'y

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y. (Refer to section 2-1-2.)
3. Release harnesses from harness clamp and disconnect one connector (CN5) on PS-517 board.
4. Remove four screws (B3×10) and then remove back light ass'y.



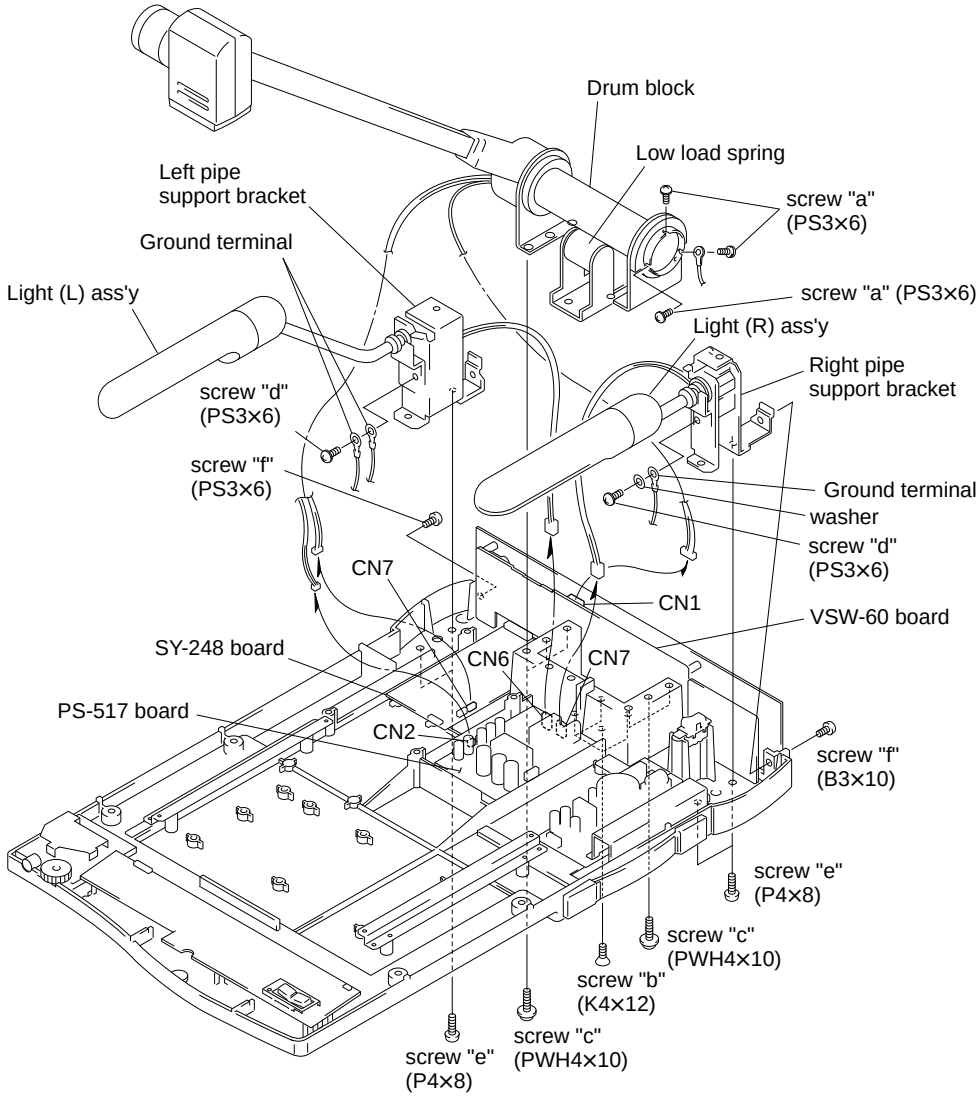
2-2-2. Removal of Drum Block and Light Ass'y L/R

Drum Block

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y. (Refer to section 2-1-2.)
3. Disconnect one connector (CN1) on VSW-60 board, one connector (CN7) on SY-248 board and one connector (CN2) on PS-517 board.
4. Remove three screws "a" (PS3×6) and release the camera arm stopper.
5. Remove four screws "b" (K4×12) not to rebound the low load spring while pressing with your hand.
6. Remove six screws "c" (PWH4×10) and then remove drum ass'y.

Light Ass'y L/R

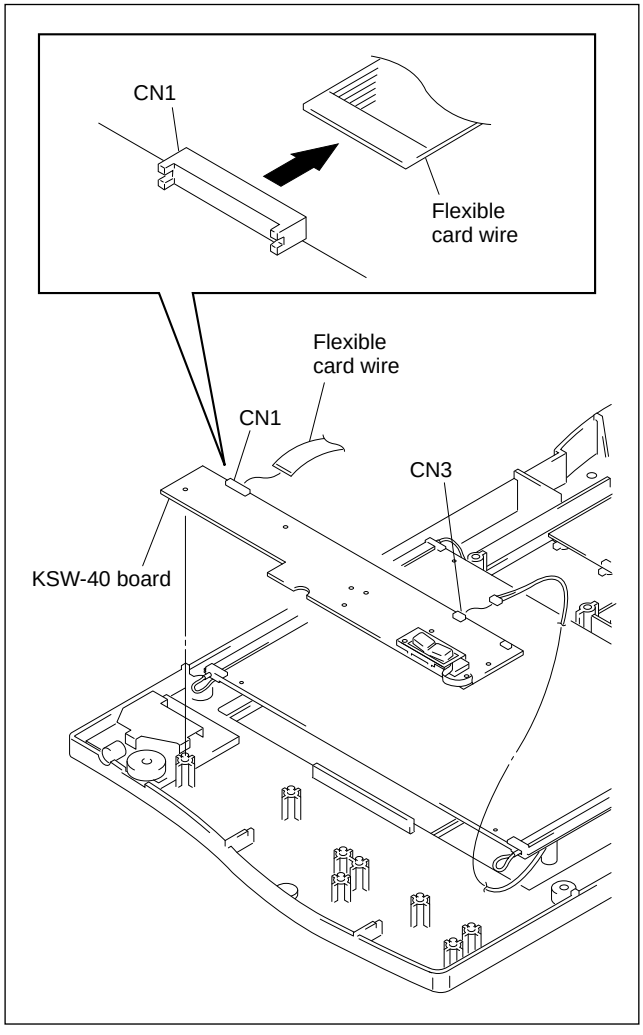
1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y. (Refer to section 2-1-2.)
3. Disconnect two connectors (CN6, CN7) on PS-517 board.
4. Remove one screw "d" (B3×6) and ground terminal.
5. Remove two each screws "e" (P4×8) fastening pipe support bracket L/R, one each screw "f" (B3×10) and then remove light ass'y L/R.



2-2-3. Removal of KSW-40 Board

NOTE : Removal/installation of flexible card wire 16P flexible card wire is used on between KSW-40 board and SY-248 board.
When handling a flexible card wire, be very careful not to bend it because this will makedly reduce its life.

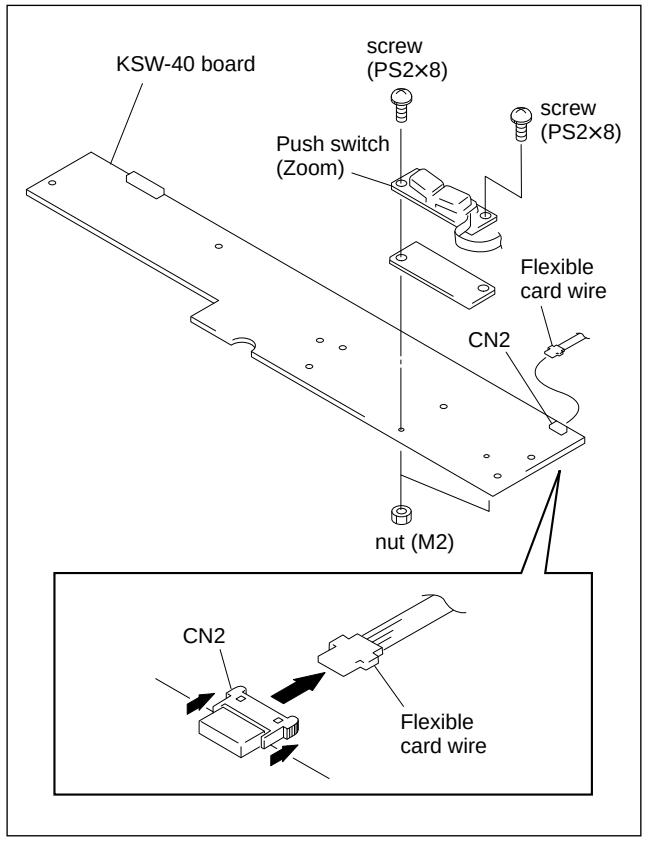
1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y. (Refer to section 2-1-2.)
3. Disconnect one flexible card wire from CN1 and one connector (CN3) on KSW-40 board, and then remove KSW-40 board.



2-2-4. Removal of Push Switch (Zoom)

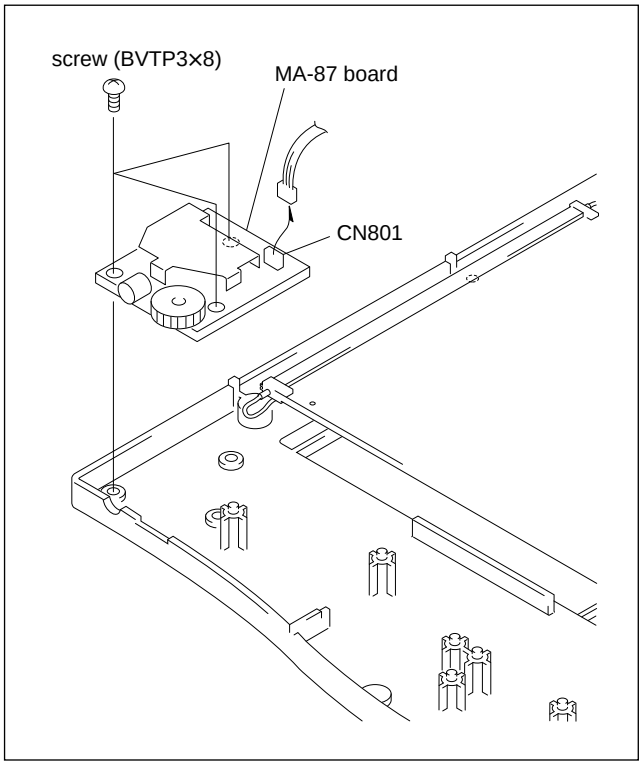
NOTE : Removal/installation of flexible card wire 5P flexible card wire is used on between KSW-40 board and the push switch.
When handling a flexible card wire, be very careful not to bend it because this will makedly reduce its life.

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y. (Refer to section 2-1-2.)
3. Remove the KSW-40 board. (Refer to section 2-2-3.)
4. Disconnect one flexible card wire from CN2 on KSW-40 board.
5. Remove two screws (PS2×8) and then remove push switch (zoom).



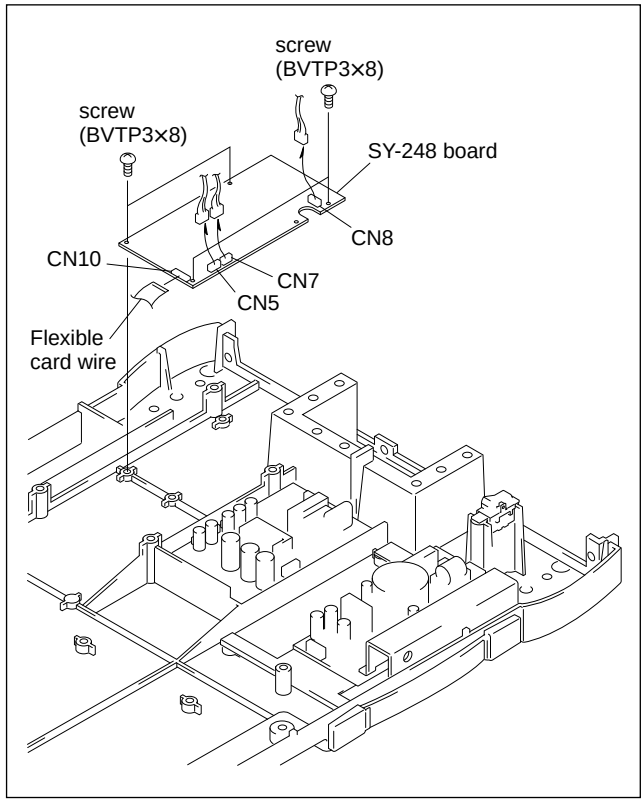
2-2-5. Removal of MA-87 Board

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y. (Refer to section 2-1-2.)
3. Disconnect one connector (CN801) on MA-87 board.
4. Remove three screws (BVTP3×8) and then remve MA-87 board.



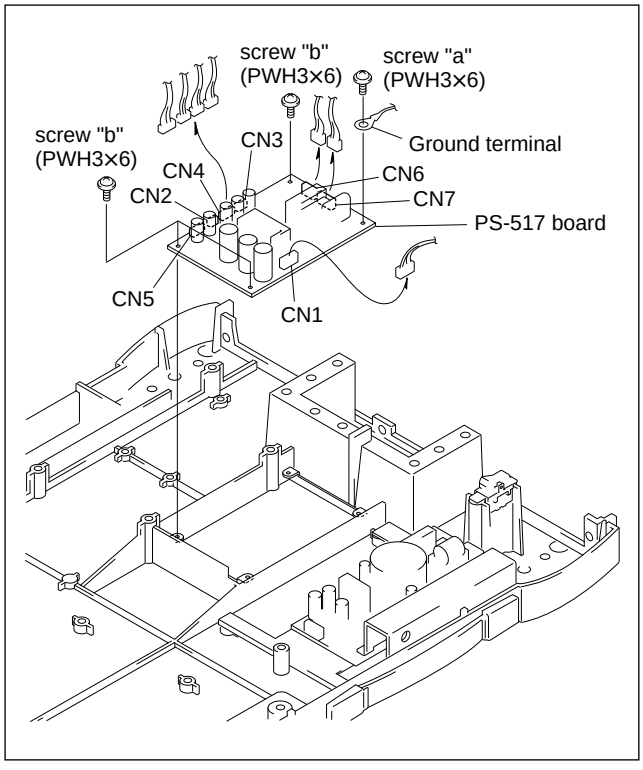
2-2-6. Removal of SY-248 Board

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y and the rear panel block. (Refer to section 2-1-2.)
3. Disconnect one flexible card wire from CN10 on SY-248 board.
4. Disconnect three connectors (CN5, CN7, CN8) on SY-248 board.
5. Remove four screws (BVTP3×8) and then remove SY-248 board.



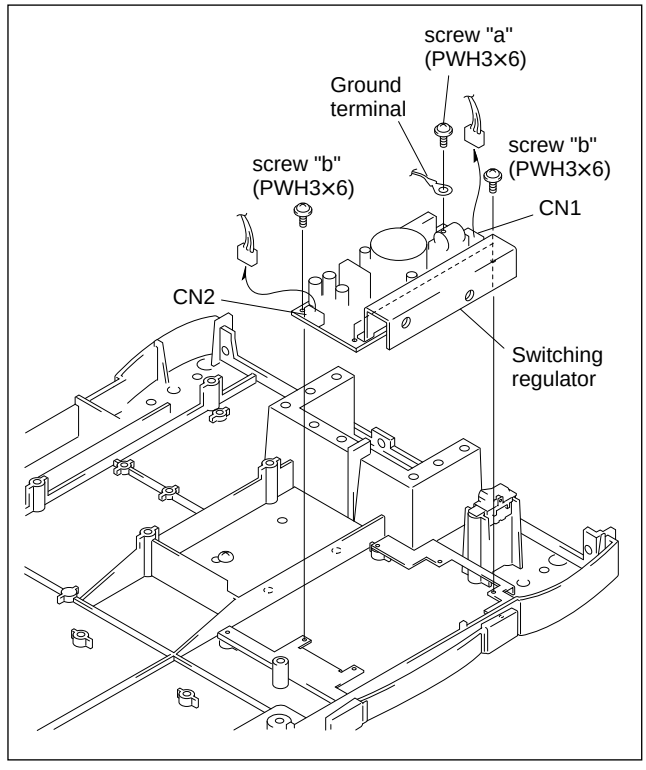
2-2-7. Removal of PS-517 Board

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y. (Refer to section 2-1-2.)
3. Disconnect seven connectors (CN1 to CN7) on PS-517 board.
4. Remove one screw "a" (PWH3×6) and ground terminal.
5. Remove three screws "b" (PWH3×6) and then remove PS-517 board.



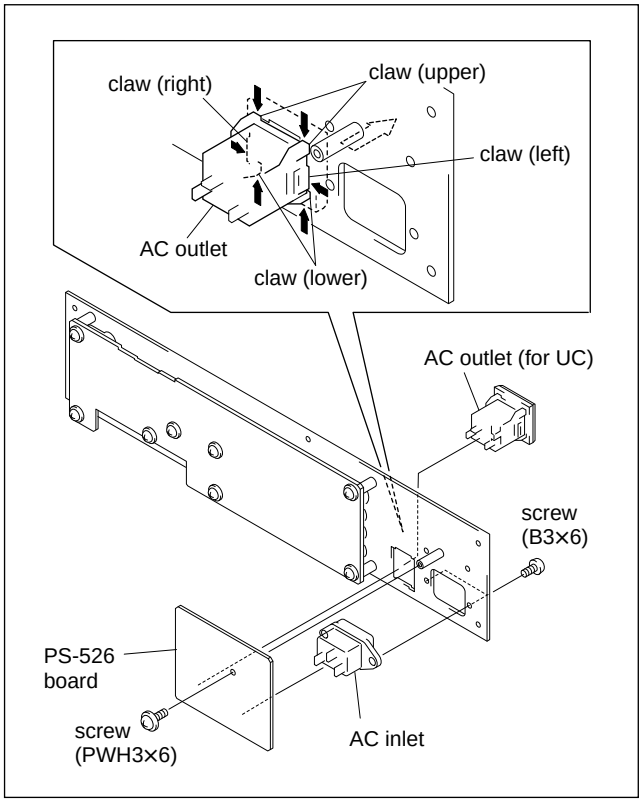
2-2-8. Removal of Switching Regulator

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the rear panel block. (Refer to section 2-1-2.)
3. Disconnect two connectors (CN1, CN2) on switching regulator.
4. Remove one screw "a" (PWH3×6) and ground terminal.
5. Remove three screws "b" (PWH3×6) and then remove switching regulator.



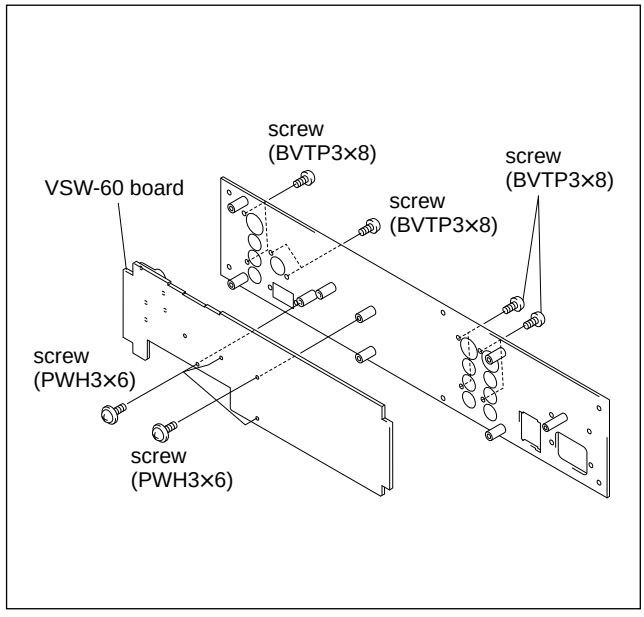
2-2-9. Removal of PS-526 Board/AC Inlet/AC Outlet (UC model only)

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the rear panel block. (Refer to section 2-1-2.)
3. Remove two screws (B3×6).
4. Unsolder AC outlet (UC model only) and AC inlet on PS-526 board.
5. Remove one screw (PWH3×6) and then remove PS-526 board.
6. Unlock two claws (left/right) and then unlock four claws (upper/lower).
   And remove AC outlet in the direction of arrow.



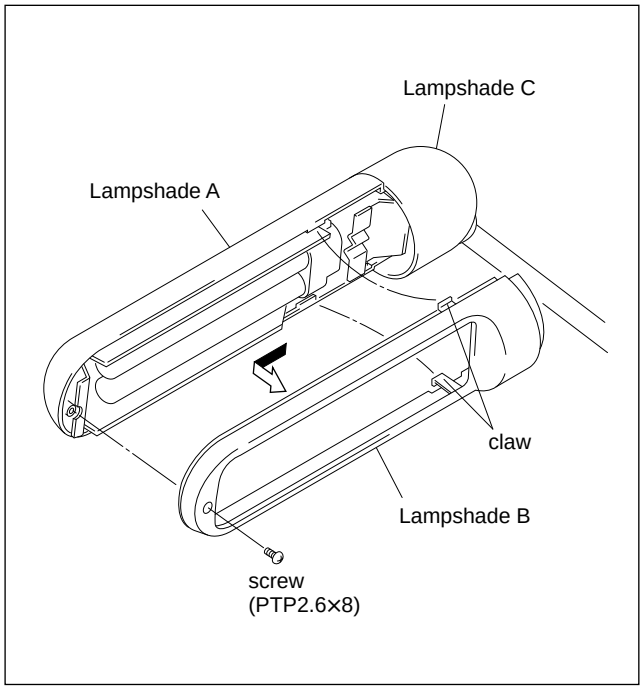
2-2-10. Removal of VSW-60 Board

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the rear panel block. (Refer to section 2-1-2.)
3. Remove eight screws (BVTP3×8).
4. Remove four screws (PWH3×6) and then remove VSW-60 board.



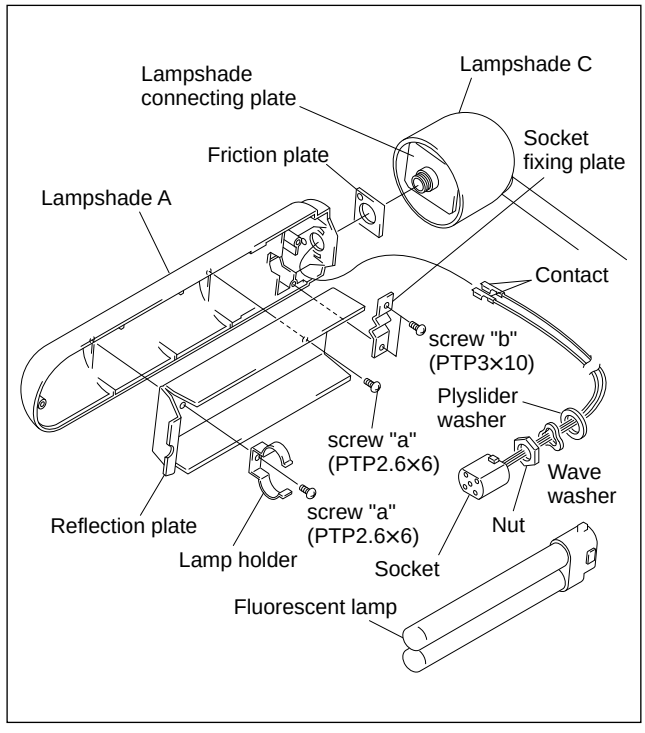
2-2-11. Removal of Lampshade B

1. Remove one screw (PTP2.6×8).
2. Slide lampshade B in the direction of arrow B while releasing two claws.



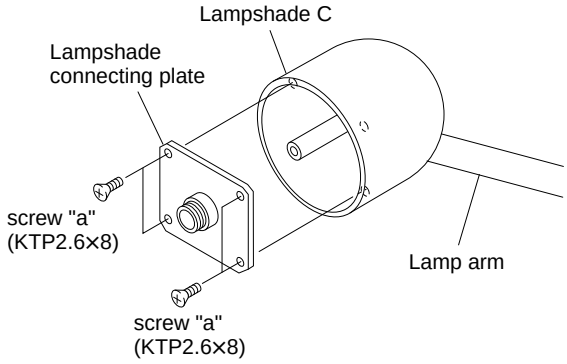
2-2-12. Removal of Lamshade A

1. Remove the cover ass'y. (Refer to section 2-1-1.)
2. Remove the table ass'y. (Refer to section 2-1-2.)
3. Remove the lampshade B. (Refer to section 2-2-11.)
4. Disconnect one connector (CN6) on PS-517 board and pull out two contacts from the connector housing.
5. Disconnect fluorescent lamp from the socket.
6. Remove two screws "a" (PTP2.6×6) and remove lamp holder and reflection plate.
7. Remove two screws "b" (PTP3×10) and then remove socket fixing plate.
8. Pull out the socket.
9. Remove the nut, wave washer, polyslider washer and friction plate, then remove lampshade A.

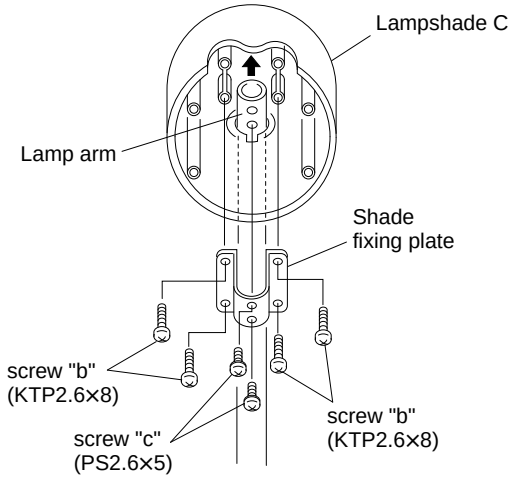


2-2-13. Removal of Lampshade C

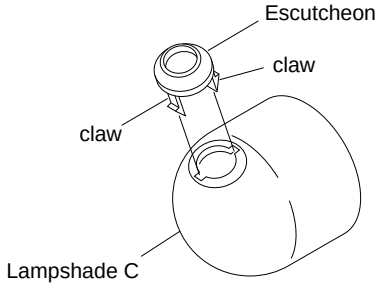
1. Remove the lampshade B. (Refer to section 2-2-11.)
2. Remove the lampshade A. (Refer to section 2-2-12.)
3. Remove four screws “a” (KTP2.6×8), then remove lampshade connecting plate.



4. Remove four screws “b” (P2.6×8), then push the lamp arm slightly in the direction of arrow.
5. Remove two screws “c” (PS2.6×5). After removing shade fixing plate, pull out the lamp arm.

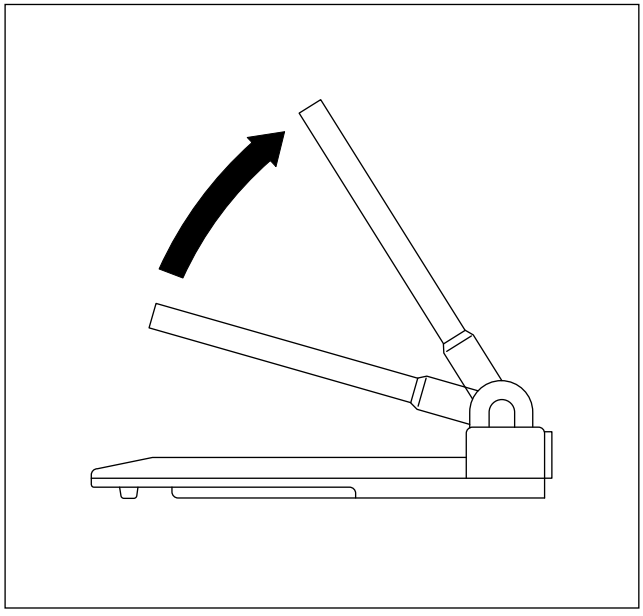


6. Release two escutcheon claws, then remove lampshade C.

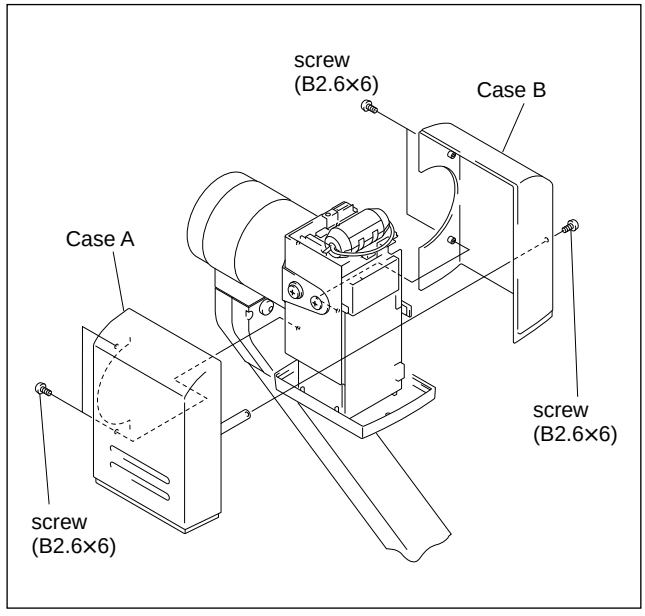


2-2-14. Replacement of Camera Ass'y (EVI-370A/for UC model)

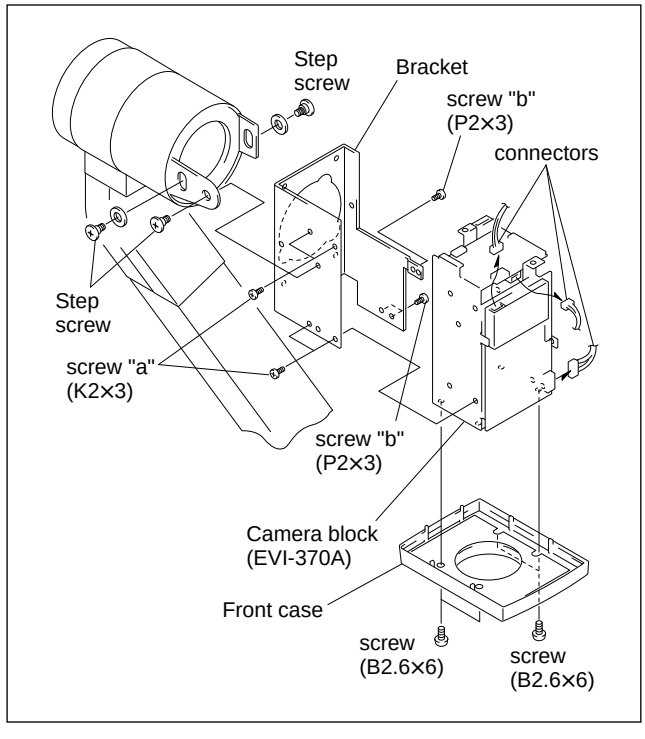
NOTE : When folding or locking of camera arm without camera block, be careful the rebounding of the camera arm as shown in below.



1. Remove five screws (B2.6×6), then remove case A/B.

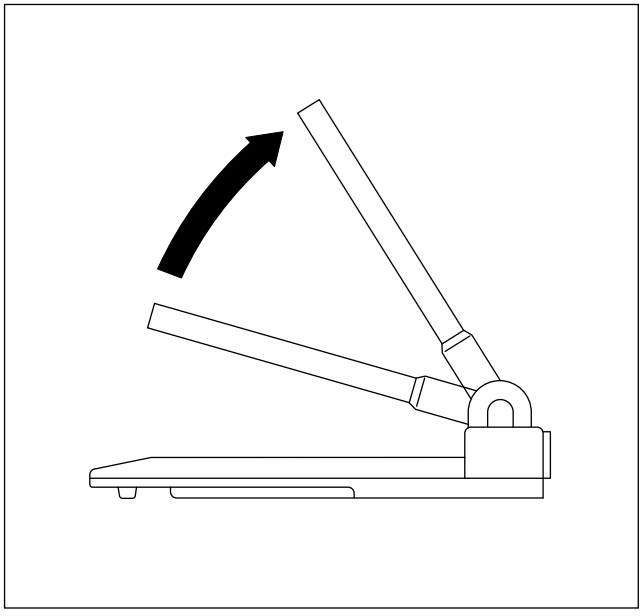


2. Disconnect three connectors on camera block.
3. Remove four screws (B2.6×6) , then remove front frame.
4. Remove three step screws, then remove camera block with the bracket.
5. Remove four screws "a" (K2×3) and three screws "b" (P2×3), then remove the bracket from camera block.

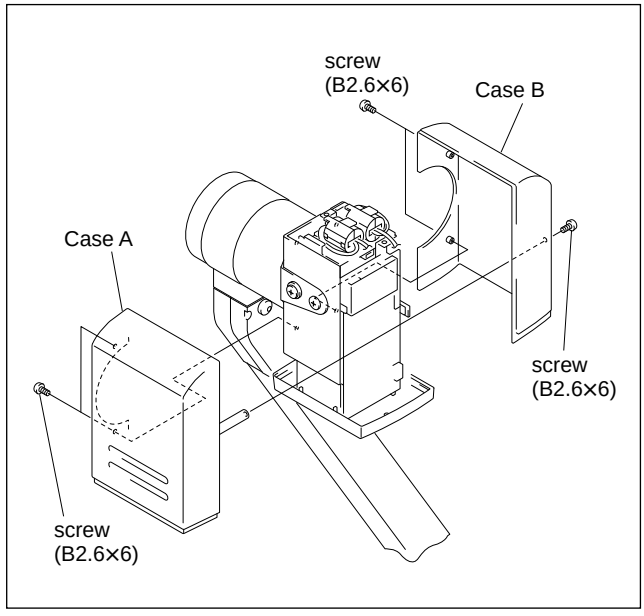


2-2-15. Replacement of Camera Ass'y (EVI-371A/for CE model)

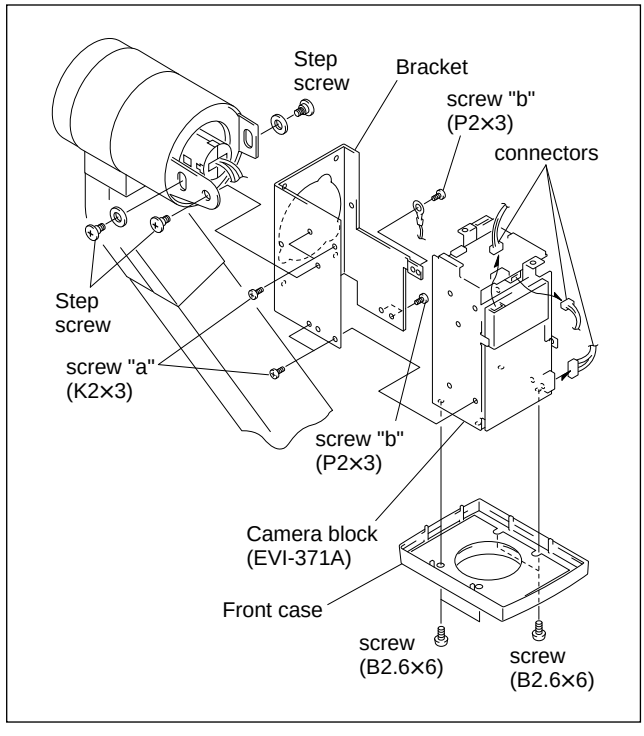
NOTE : When folding or locking of camera arm without camera block, be careful the rebounding of the camera arm as shown in below.



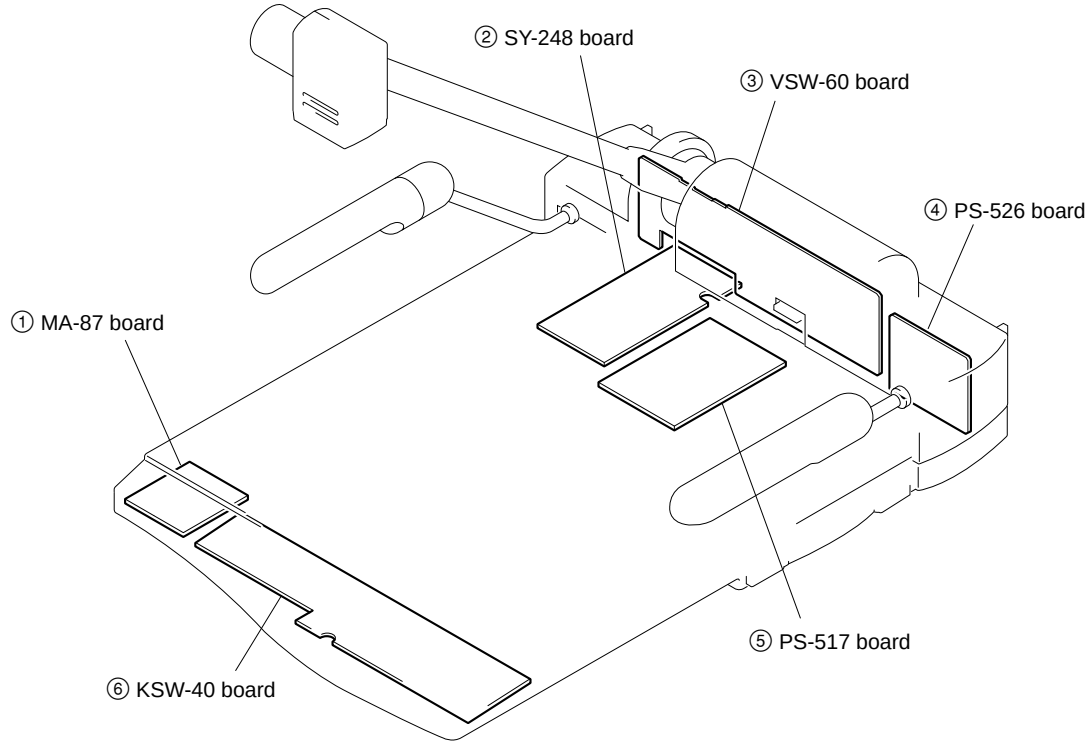
1. Remove five screws (B2.6×6), then remove case A/B.



2. Disconnect three connectors on camera block.
3. Remove four screws (B2.6×6) , then remove front frame.
4. Remove three step screws, then remove camera block with the bracket.
5. Remove four screws "a" (K2×3) and three screws "b" (P2×3), then remove the bracket from camera block.



2-3. BOARD LOCATION



① MA-87 board : MIC AMP
② SY-248 board : SYSCON
③ VSW-60 board : VIDEO/AUDIO
④ PS-526 board : Power Input/Output, Filter
⑤ PS-517 board : Power Supply
⑥ KSW-40 board : Key Switch

2-4. CONNECTOR I/O SIGNALS (VIDEO, AUDIO)

Input

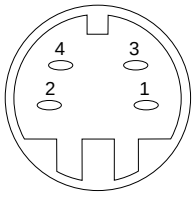
S-Video : 4-pin mini DIN × 2
Y signal : 1.0 V p-p, 75 Ω, Negative Sync.
C signal : 0.286 V p-p, 75 Ω (for UC model)
0.3 V p-p, 75 Ω (for CE model)
Composite video : RCA pin × 2
1.0 V p-p, 75 Ω, Negative Sync.
Audio : RCA pin × 2 (Stereo)
Input impedance : More than 37 kΩ
Input level : More than −10 dB
Microphone : Standard jack × 1
Input impedance : More than 3 kΩ
Input level : More than −60 dB

Output

S-Video : 4-pin mini DIN × 1
Y signal : 1.0 V p-p, 75 Ω, Negative Sync.
C signal : 0.286 V p-p, 75 Ω (for UC model)
0.3 V p-p, 75 Ω (for CE model)
Composite video : RCA pin × 1
1.0 V p-p, 75 Ω, Negative Sync.
BNC pin × 1
1.0 V p-p, 75 Ω, Negative Sync.
Audio : RCA pin × 1 (Stereo)
Output impedance : More than 37 kΩ
Output level : −10 ± 3 dB

Power supply input × 1 : 120 V AC, 60 Hz (for UC model)
230 V AC, 50/60 Hz (for CE model)
AC outlet × 1
(for UC model) : unswitched, maximum 2.5 A

<external view>



S-VIDEO

S-VIDEO

Pin No.	INPUT/OUTPUT signal
1	Y (G)
2	C (G)
3	Y (X)
4	C (X)

2-5. REPLACEMENT OF PARTS

2-5-1. Notes on Spare Parts

(1) Safety Related Components Warning

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

(2) Standardization of Parts

Spare parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to “accommodating the improved parts and/or engineering changes” or “standardization of genuine parts”. This manual's exploded views and electrical spare parts list are indicating the part numbers of “the standardized genuine parts at present”.

(3) Stock of Parts

Parts marked with “o” SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with “o” will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors

The following units are assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : μF
Inductors : μH
Resistors : Ω

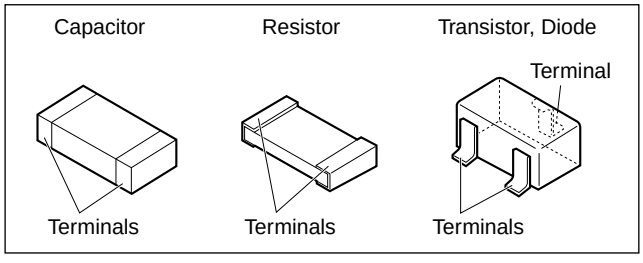
2-5-2. Replacement of Chip Parts

Required Tools

Soldering iron : 20 W
If possible, use a soldering-iron tip heatcontroller set to 270 ± 10 ˚C.
Braided wire : Solder Taul or equivalent
Sony part No. 7-641-300-81
Solder : 0.6 mm dia. is recommended.
Tweezers

Soldering Conditions

Soldering iron temperature : 270 ± 10 ˚C
Soldering time : Less than 2 seconds per pin



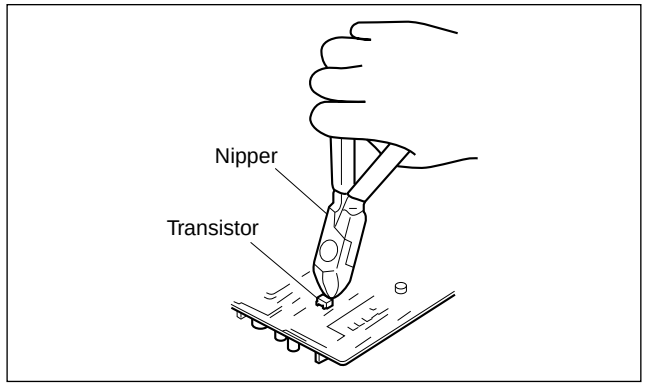
Replacement of Resistor and Capacitor

1. Place the soldering-iron tip onto the chip part and heat it up until the solder is melted. When the solder is melted, slide the chip part aside.
2. Make sure that there is no pattern peeling, damage and/or bridge around the desoldering position.
3. After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
4. Place new chip part in the desired position and solder both ends.

NOTE Do not use a chip part again once it has been removed.

Replacement of Transistors and Diodes

1. Cut the terminals of the chip part with nippers.
2. Remove the cut leads with soldering iron as above.
3. Make sure that there is no pattern peeling, damage and/or bridge around the desoldering positions.
4. After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
5. Place new chip part in the desired position and solder the terminals.



Replacement of ICs

1. Using the braided wire, “SOLDER TAUL” (Sony Part No. 7-641-300-81), remove the solder around the pins of the IC-chip to be removed.
2. While heating up the pins, remove the pins one by one using sharp-pointed tweezers.
3. Make sure that there is no pattern peeling, damage and/or bridge around the desoldering position.
4. After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
5. Place new chip part in the desired position and solder the pins.

SECTION 3
ALIGNMENT

3-1. ELECTRICAL ADJUSTMENT

3-1-1. Equipment Required

- Oscilloscope (Tektronix TDS360/200 MHz or equivalent)
- Vector Scope (Tektronix 1720 or equivalent for NTSC model)
- Vector Scope (Tektronix 1721 or equivalent for PAL model)
- Multiformat Signal Generator (Tektronix TSG130A with S-VIDEO OUT for NTSC model)
- Multiformat Signal Generator (Tektronix TSG131A with S-VIDEO OUT for PAL model)
- Monitor TV
- S-VIDEO signal cable
- BNC-BNC cable
- BNC-PIN cable

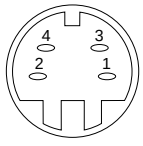
3-1-2. Preparations and Notes on Alignment

Making the S-VIDEO signal cable

Preparation **:** S-S video cable about 5 meters in length (standard product)
Alligator Clips 4pcs

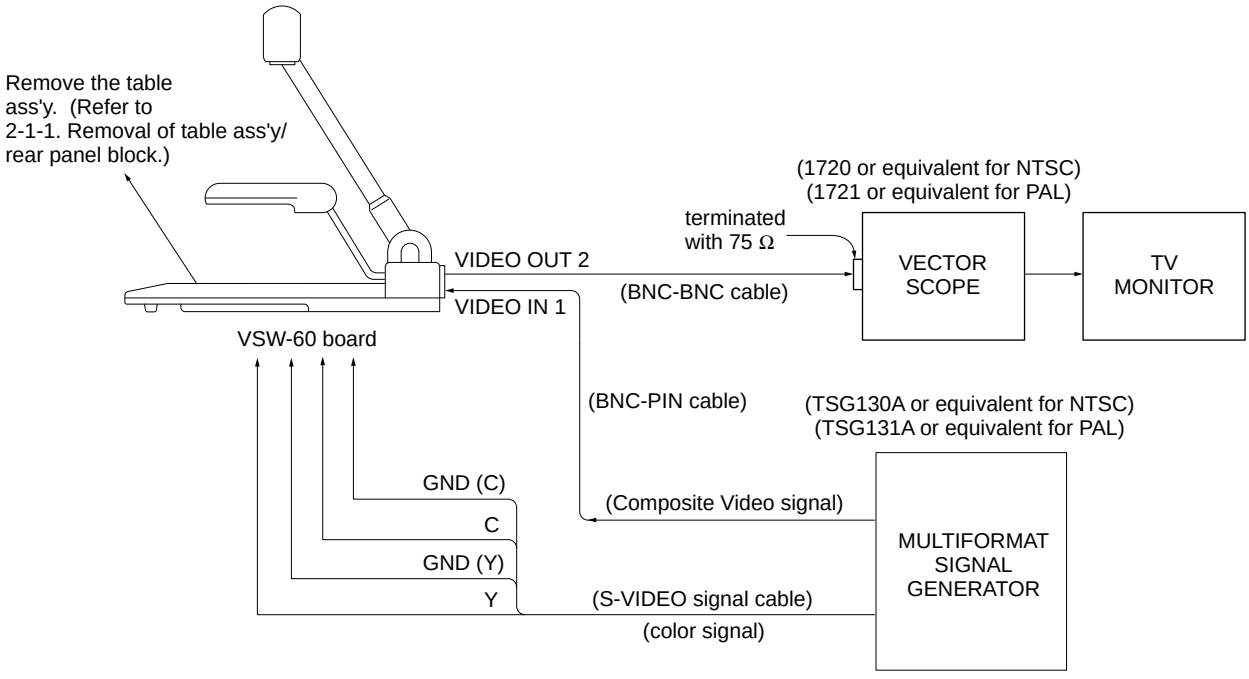
Making the cable **:** 1. Cut the cable in harf.
2. Cut the cable integument with a cutter.
3. Strip the cover of the shield wire with a nipper.
4. Check the Y/C core wire with a tester.
5. Connect alligator clips to each core wires.

S-VIDEO
Connector



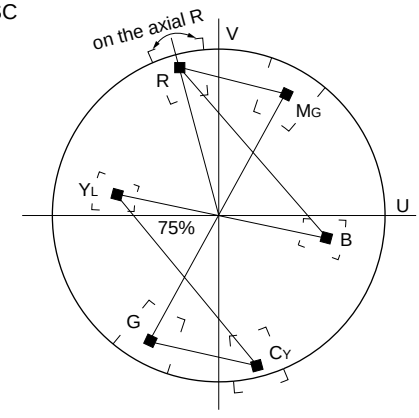
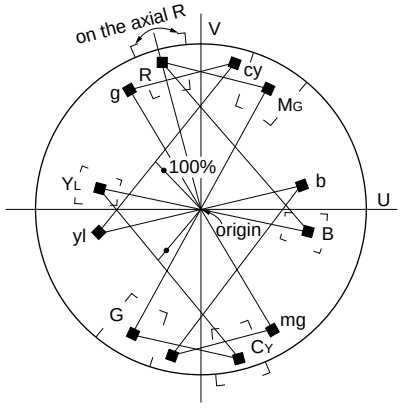
1 GND (Y)
2 GND(C)
3 Y
4 C

3-1-3. Connection



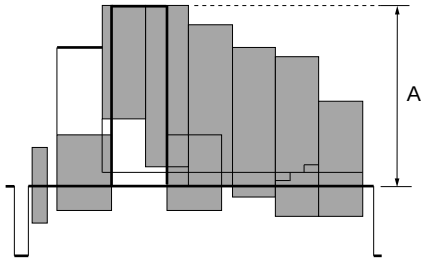
- Connect C signal from the signal Generator to CN1-2 pin (G-1) on side A of VSW-60 board.
- Connect GND (C) signal from the signal Generator to CN1-2 pin (G-1) on side A of VSW-60 board.
- Connect Y signal from the signal Generator to CN1-2 pin (G-1) on side A of VSW-60 board.
- Connect GND (Y) signal from the signal Generator to CN1-2 pin (G-1) on side A of VSW-60 board.

3-1-4. Negative Positive Invert Phase Adjustment

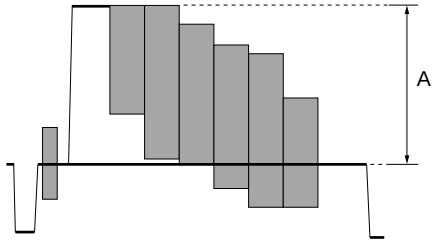
Machine condition for adjustment	Specifications	Adjustments
• Disconnect the CN1/VSW-60 (G1 on side A) • Refer to 3-1-3. Connection and connect S-VIDEO signal cable to VSW-60 board. • Turn the POWER switch ON. • Confirm the CAMERA lamp of VIDEO OUT button on the operation panel lights. • Press the NEGA button of the EFFECT on the operation panel, make the lamp light up. • After adjustment is completed, disconnect the S-VIDEO signal cable and connect the CN1. • Turn the POWER switch OFF.	VIDEO OUT 2 connector (terminated with 75 Ω) Vectorscope NTSC  RED bright spots are on the axial R ± 3° PAL  RED bright spots are on the axial R ± 3°	◓ RV201/VSW-60 (H1 on side A)

3-1-5. Y/C Separation Adjustment

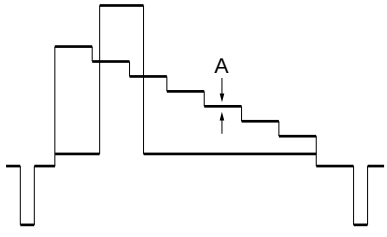
<table>
<tr><th>Machine condition for adjustment</th><th>Specifications</th><th>Adjustments</th></tr>
<tr><td rowspan="2">• VIDEO IN 1 : color bar signal
• Turn the POWER switch ON.
• Press the VIDEO 1 button of the VIDEO OUT button on the operation panel, make the lamp light up.</td><td>Step 1
TP301/VSW-60 (F2 on side B)
Oscilloscope

NTSC
 

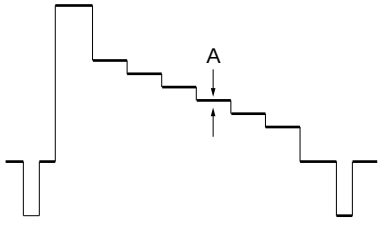
A=714±15 mV p-p

PAL
 

A=700±14 mV p-p</td><td>⊘ RV301/VSW-60 (F1 on side A)</td></tr>
<tr><td>Step 2
TP301/VSW-60 (F2 on side B)
Oscilloscope

NTSC
 

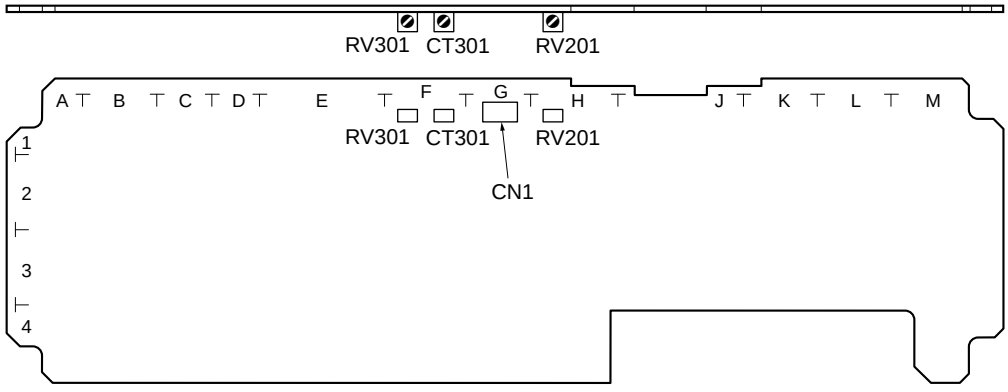
Minimize the A level (chroma).
(A ≦ 50 mV)

PAL
 

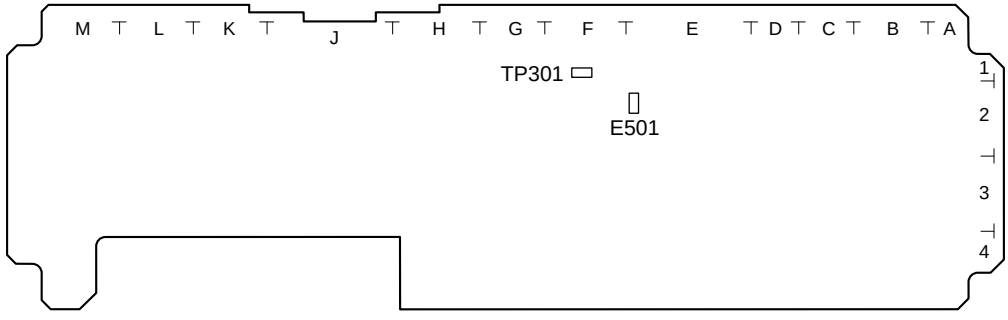
Minimize the A level (chroma).
(A ≦ 50 mV)</td><td>⊘ CT301/VSW-60 (F1 on side A)</td></tr>
</table>

3-1-6. Adjustment Parts Location of VSW-60 Board

VSW-60 BOARD (side A)



VSW-60 BOARD (side B)



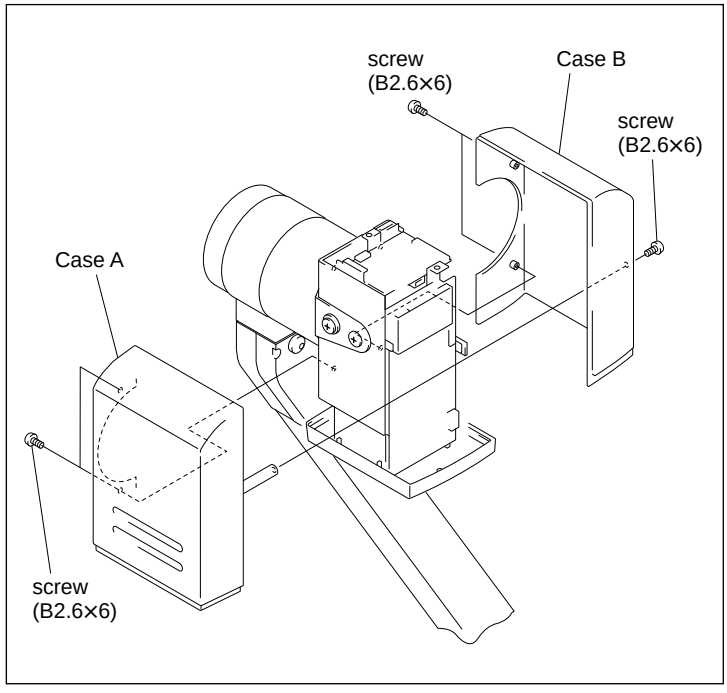
3-2. MECHANISM ADJUSTMENT (RIGHT POSITION ADJUSTMENT OF CAMERA)

Procedure of right position adjustment of camera is as follows.

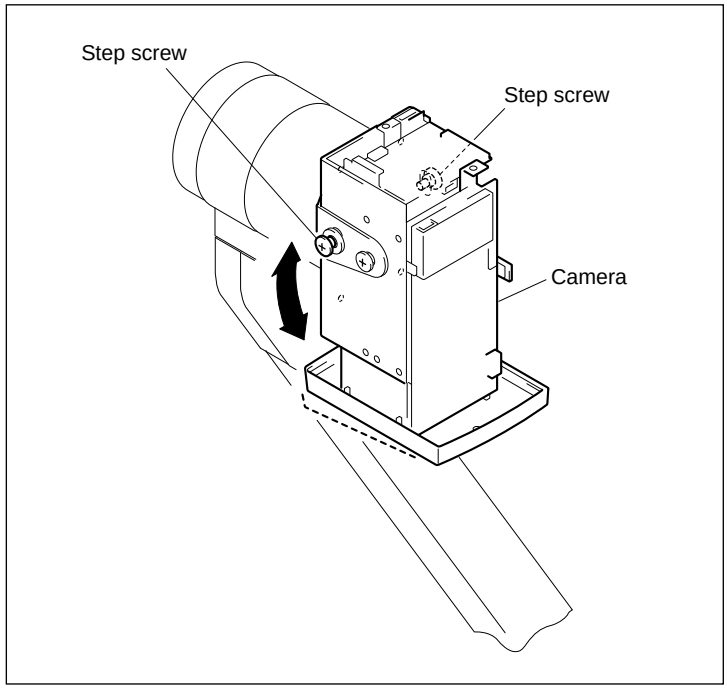
1. Set the camera to WIDE and check that when the monitor is displayed, the left and rights sides of the backlight frame on the table are equal.

If the backlight frame is not egualed:

2. Remove the five screws (B2.6×6), then remove the case A, B.



3. Loosen the two step screws.
   (Caution : Never remove the two screws)
   The camera is tilted and the left side of the table appears on the monitor screen.
4. Tighten the two step screws loosen at step 3 at the position that the right or left shift of the backlight frame on the table is eliminated.



SECTION 4
SEMICONDUCTOR PIN ASSIGNMENTS

Semiconductors of which functions are equivalent are described here. For parts replacement, refer to the section of Spare Parts in this manual. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

ここに記載されている半導体は，それぞれの機能を等価的に表したものです。　なお，互換性のない型名を併記していることがありますので，部品を交換するときは，Spare Partsの章を参照してください。
等価回路はICメーカーのデータブックに従いました。

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RD11ES-T2B2 4-2
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DTC144EUA-T106 4-2

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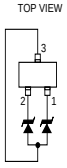
TC74HC221AF(EL) 4-8
UPC1093T 4-8
UPC1093T-E1 4-8
UPC4558G2 4-7

DIODE



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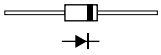


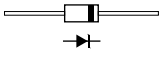
11ES2
11ES2-TA2B
1SS119
1SS119-25TD

-TOP VIEW-

1SR154-400TE-25
1SS355TE-17

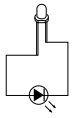
-TOP VIEW-

MA728
MA728-TX

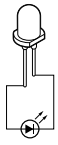


RD11ES-B2
RD11ES-T2B2
RD15ES-B2
RD15ES-T2B2
RD6.2ES-B2
RD6.2ES-T1B
RD6.8ES-B2
RD6.8ES-T2B2

LED

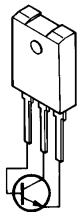


GL3PR8;RED



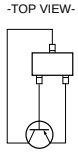
SEL5620C-TP15

TRANSISTOR

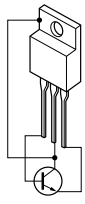


2SA1428-Y

-TOP VIEW-

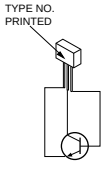


2SA1611-M5M6
2SA1611T1-M5M6



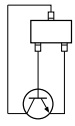
2SC2334-L

TYPE NO.
PRINTED



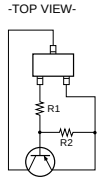
2SC2785TP-HFE

-TOP VIEW-



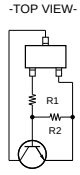
2SC4177-L
2SC4177-T1L5L6

-TOP VIEW-



DTA144TUA-T106

-TOP VIEW-



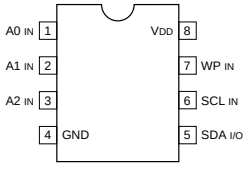
DTC144EUA-T106

IC

AT24C01A-10SC-B(ATMEL)

C-MOS EEPROM MEMORY

—TOP VIEW—

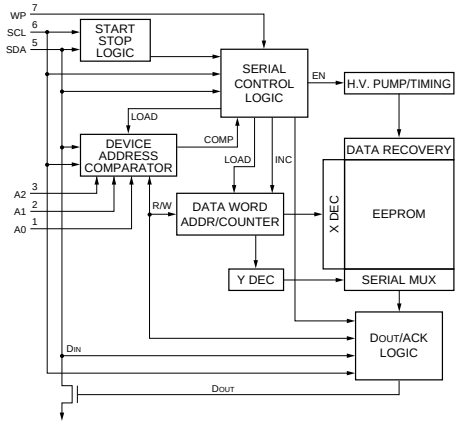


INPUT

A0 - A3 : ADDRESS
SCL : SERIAL CLOCK
WP : WRITE PROTECT

INPUT/OUTPUT

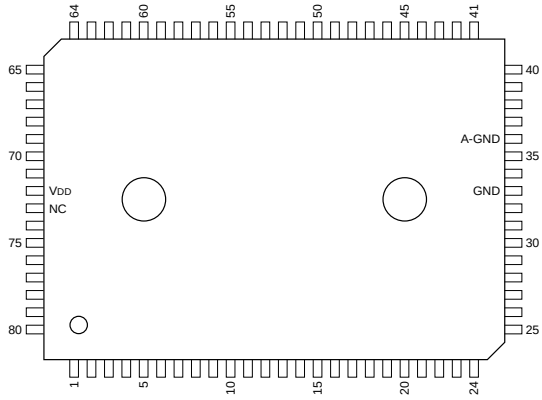
SDA : SERIAL DATA



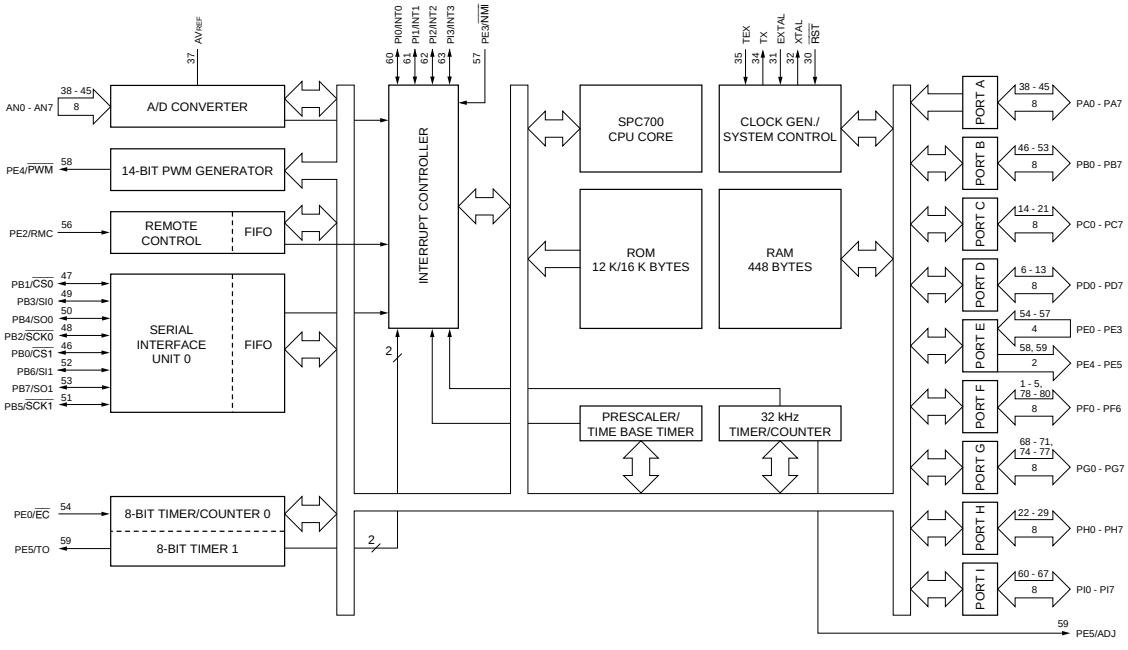
CXP84412-007Q(SONY)

C-MOS 8-BIT SINGLE CHIP MICROCOMPUTER

—TOP VIEW—

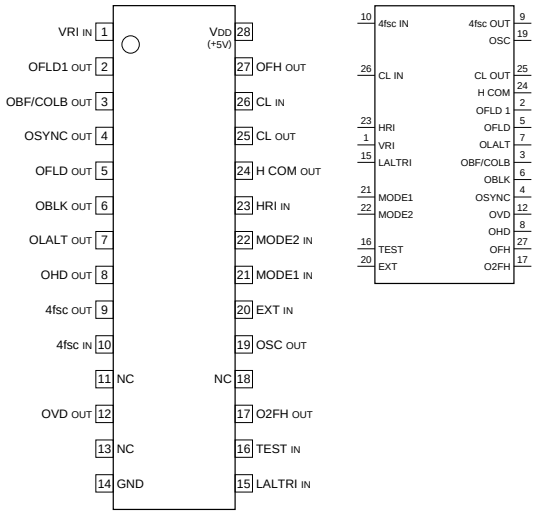


PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I/O	PF3	21	I/O	PC7	41	I/O	PA3/AN3	61	I/O	PI1/INT1
2	I/O	PF4	22	I/O	PH0	42	I/O	PA4/AN4	62	I/O	PI2/INT2
3	I/O	PF5	23	I/O	PH1	43	I/O	PA5/AN5	63	I/O	PI3/INT3
4	I/O	PF6	24	I/O	PH2	44	I/O	PA6/AN6	64	I/O	PI4
5	I/O	PF7	25	I/O	PH3	45	I/O	PA7/AN7	65	I/O	PI5
6	I/O	PD0	26	I/O	PH4	46	I/O	PB0/$\overline{CS1}$	66	I/O	PI6
7	I/O	PD1	27	I/O	PH5	47	I/O	PB1/$\overline{CS0}$	67	I/O	PI7
8	I/O	PD2	28	I/O	PH6	48	I/O	PB2/$\overline{SCK0}$	68	I/O	PG0
9	I/O	PD3	29	I/O	PH7	49	I/O	PB3/SI0	69	I/O	PG1
10	I/O	PD4	30	I	$\overline{RST}$	50	I/O	PB4/SO0	70	I/O	PG2
11	I/O	PD5	31	I	EXTAL	51	I/O	PB5/$\overline{SCK1}$	71	I/O	PG3
12	I/O	PD6	32	O	XTAL	52	I/O	PB6/SI1	72	—	VDD
13	I/O	PD7	33	—	GND	53	I/O	PB7/SO1	73	—	NC
14	I/O	PC0	34	O	TX	54	I	PE0/$\overline{EC}$	74	I/O	PG4
15	I/O	PC1	35	I	TEX	55	I	PE1	75	I/O	PG5
16	I/O	PC2	36	—	A-GND	56	I	PE2/RMC	76	I/O	PG6
17	I/O	PC3	37	I	AVREF	57	I	PE3/$\overline{NMI}$	77	I/O	PG7
18	I/O	PC4	38	I/O	PA0/AN0	58	O	PE4/$\overline{PWM}$	78	I/O	PF0
19	I/O	PC5	39	I/O	PA1/AN1	59	O	PE5/TO/ADJ	79	I/O	PF1
20	I/O	PC6	40	I/O	PA2/AN2	60	I/O	PI0/INT0	80	I/O	PF2



CXD1217M(SONY)FLAT PACKAGE
CXD1217M-TH

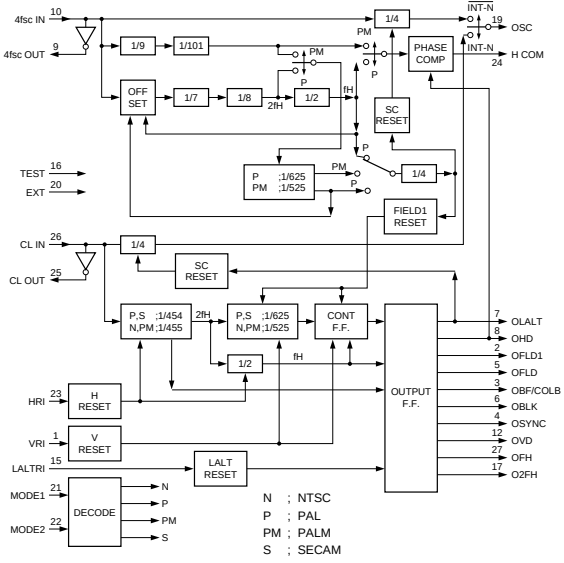
C-MOS SYNC GENERATOR
-TOP VIEW-



SYSTEM	4fsc	CLOCK
NTSC	910fH	910fH
PAL	1135fH+2fV	908fH
PALM	909fH	910fH
SECAM	—	908fH

INPUT		SYSTEM
MODE1	MODE2	
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

0 ; LOW LEVEL
1 ; HIGH LEVEL



N ; NTSC
P ; PAL
PM ; PALM
S ; SECAM

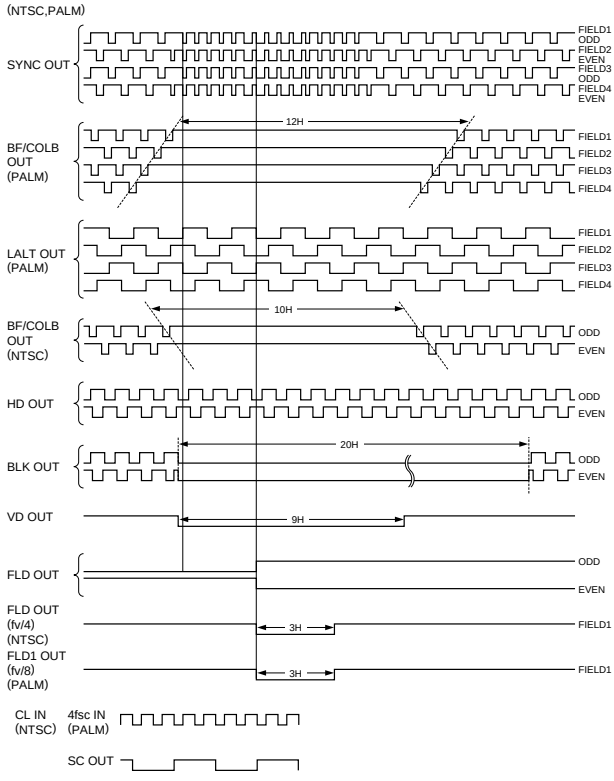
INPUT

4fSC IN	;	4fSC INPUT
CL IN	;	CLOCK INPUT
EXT	;	SYNC MODE SELECT (L ; INTERNAL/H ; EXTERNAL)
HRI	;	H RESET
LALTRI	;	LINE CHANGE RESET
MODE 1,2	;	SYSTEM SELECT
VRI	;	V RESET

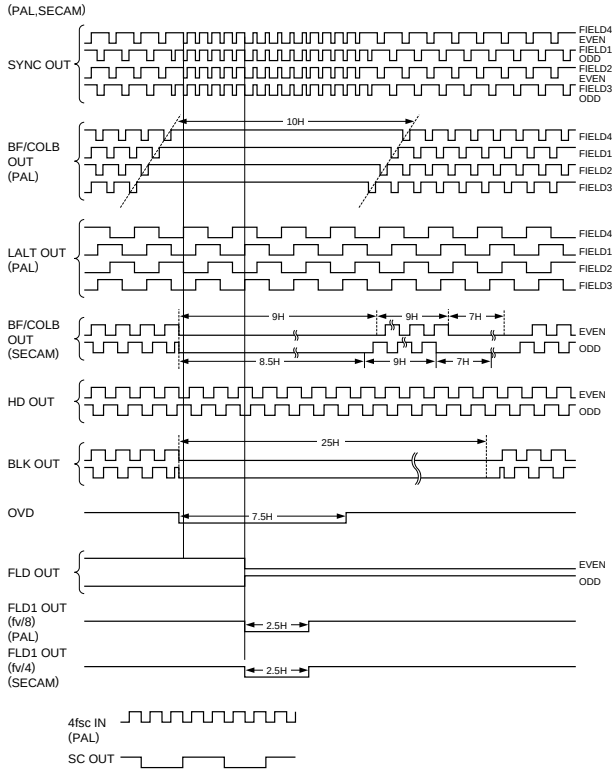
OUTPUT

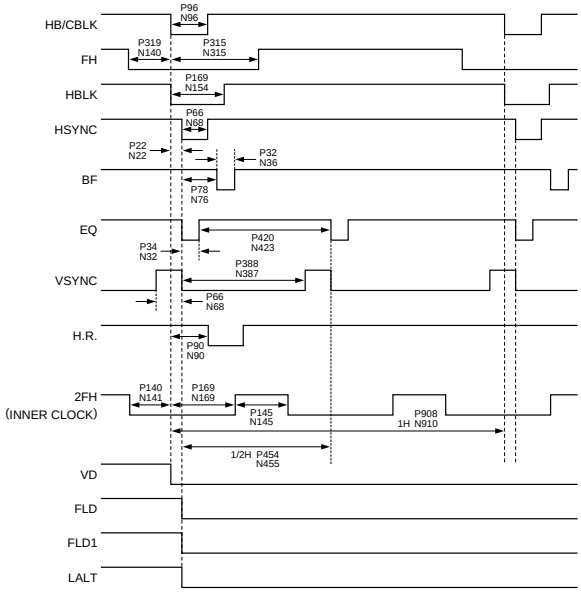
4fSC OUT	;	4fSC OUTPUT
CL OUT	;	CLOCK OUTPUT
H COM	;	PHASE COMPARATOR
O2fH	;	2fH OUTPUT
OBF/COLB	;	BURST FLAG/COLOR BLANKING
OBLK	;	COMPOSITE BLANKING
OFH	;	H FREQUENCE
OFLD	;	EVEN,ODD
OFLD1	;	FIELD1
OHD	;	H DRIVE
OLALT	;	LINE CHANGE
OSC	;	SUB CARRIER
OSYNC	;	COMPOSITE SYNC
OVD	;	V DRIVE

(NTSC,PALM)



(PAL,SECAM)

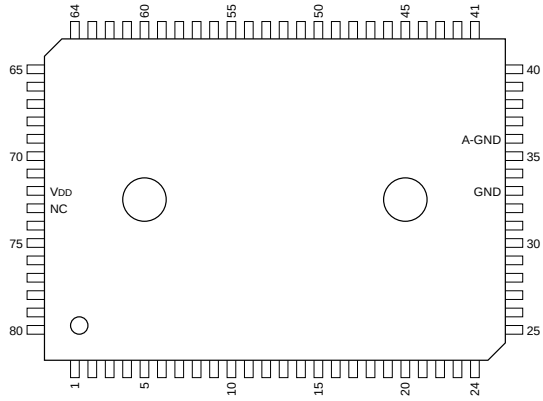




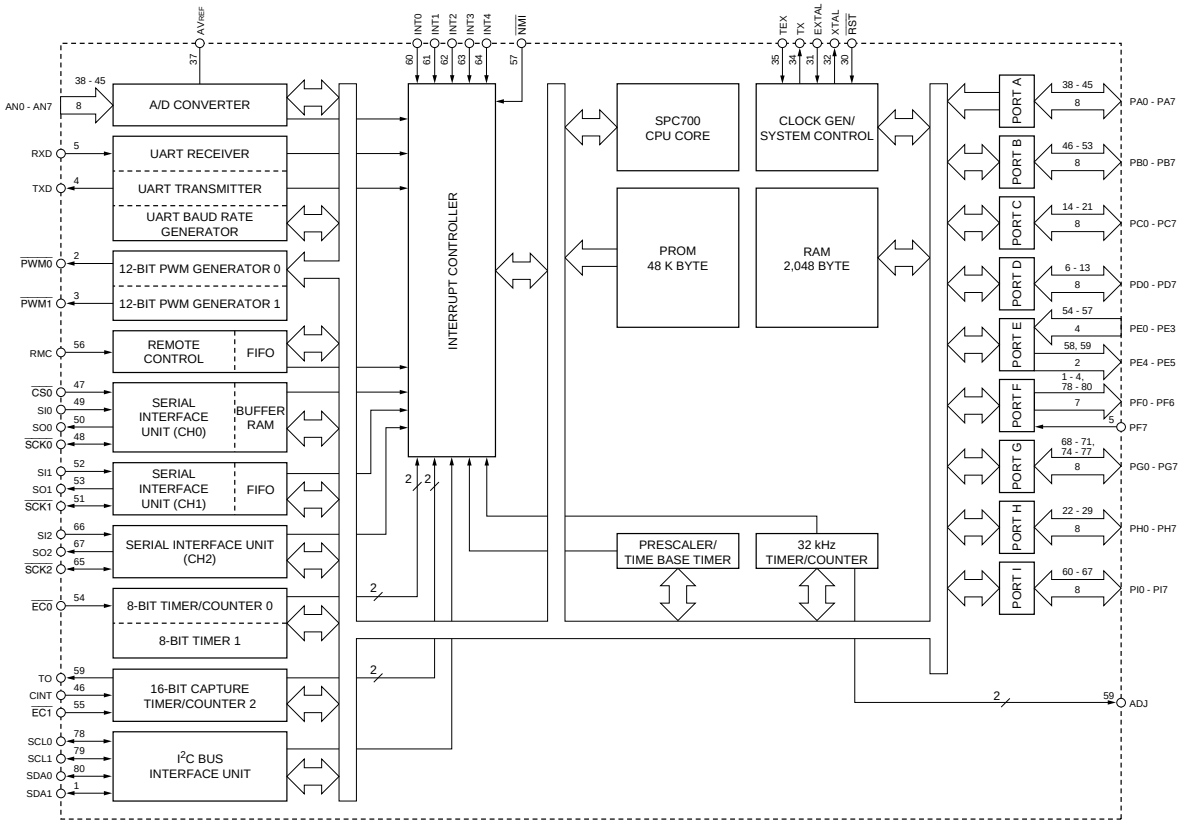
P : PAL,SECAM
N : NTSC,PALM

CXP846P48Q-1-011(SONY)

C-MOS 8-BIT SINGLE CHIP MICROCOMPUTER
—TOP VIEW—

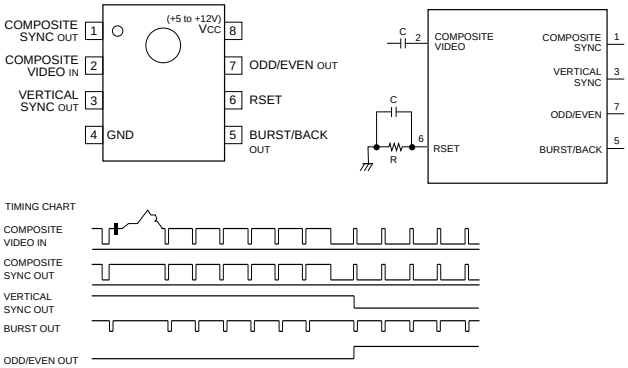


PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I/O	PF3/SDA1	21	I/O	PC7	41	I/O	PA3/AN3	61	I/O	PI1/INT1
2	O	PF4/$\overline{PWM0}$	22	I/O	PH0	42	I/O	PA4/AN4	62	I/O	PI2/INT2
3	O	PF5/$\overline{PWM1}$	23	I/O	PH1	43	I/O	PA5/AN5	63	I/O	PI3/INT3
4	O	PF6/TXD	24	I/O	PH2	44	I/O	PA6/AN6	64	I/O	PI4/INT4
5	I	PF7/RXD	25	I/O	PH3	45	I/O	PA7/AN7	65	I/O	PI5/$\overline{SCK2}$
6	I/O	PD0	26	I/O	PH4	46	I/O	PB0/$\overline{CINT}$	66	I/O	PI6/SI2
7	I/O	PD1	27	I/O	PH5	47	I/O	PB1/$\overline{CS0}$	67	I/O	PI7/SO2
8	I/O	PD2	28	I/O	PH6	48	I/O	PB2/$\overline{SCK0}$	68	I/O	PG0
9	I/O	PD3	29	I/O	PH7	49	I/O	PB3/SI0	69	I/O	PG1
10	I/O	PD4	30	I	$\overline{RST}$	50	I/O	PB4/SO0	70	I/O	PG2
11	I/O	PD5	31	I	EXTAL	51	I/O	PB5/$\overline{SCK1}$	71	I/O	PG3
12	I/O	PD6	32	O	XTAL	52	I/O	PB6/SI1	72	—	VDD
13	I/O	PD7	33	—	GND	53	I/O	PB7/SO1	73	—	NC
14	I/O	PC0	34	O	TX	54	I	PE0/$\overline{EC0}$	74	I/O	PG4
15	I/O	PC1	35	I	TEX	55	I	PE1/$\overline{EC1}$	75	I/O	PG5
16	I/O	PC2	36	—	A-GND	56	I	PE2/RMC	76	I/O	PG6
17	I/O	PC3	37	I	AVREF	57	I	PE3/$\overline{NMI}$	77	I/O	PG7
18	I/O	PC4	38	I/O	PA0/AN0	58	O	PE4	78	I/O	PF0/SCL0
19	I/O	PC5	39	I/O	PA1/AN1	59	O	PE5/TO/ADJ	79	I/O	PF1/SCL1
20	I/O	PC6	40	I/O	PA2/AN2	60	I/O	PI0/INT0	80	I/O	PF2/SDA0



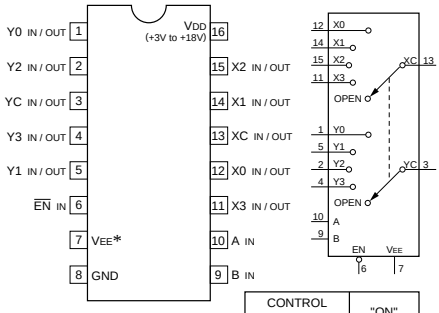
LM1881M((NS)FLAT PACKAGE
LM1881MX

VIDEO SYNC SEPARATOR
—TOP VIEW—



MC14052BF(MOTOROLA)FLAT PACKAGE
MC14052BF-T2

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXERS / DEMULTIPLEXERS
-TOP VIEW-



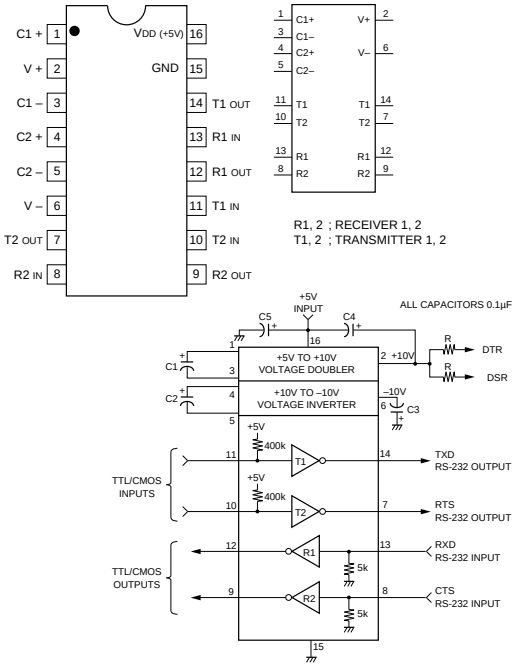
VEE*; VDD – VEE = +3V to +18V

CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	×	×	OPEN

0 ; LOW LEVEL
1 ; HIGH LEVEL
×; DON'T CARE

MAX232N(T1)
MAX232CPE

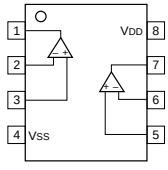
C-MOS RS-232 TRANSMITTER/RECEIVER
-TOP VIEW-



R1, 2 ; RECEIVER 1, 2
T1, 2 ; TRANSMITTER 1, 2

MC14577CF(MOTOROLA)FLAT PACKAGE
MC14577CFEL

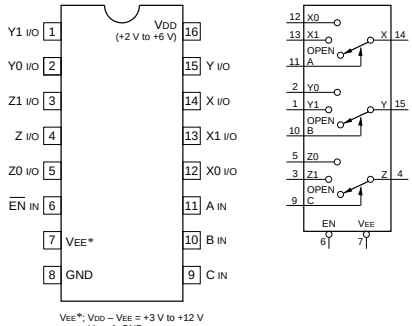
C-MOS DUAL VIDEO AMPLIFIERS
-TOP VIEW-



*VDD + I VSS I = + 5V to +12V

MC74HC4053F(MOTOROLA)FLAT PACKAG
MC74HC4053F-T2

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
-TOP VIEW-



VEE*; VDD – VEE = +3 V to +12 V
VEE ≤ GND

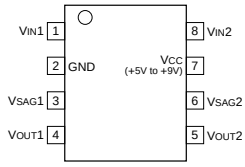
CONTROL INPUTS				ON CHANNEL		
EN	SELECT					
	C	B	A			
0	0	0	0	Z0	Y0	X0
0	0	0	1	Z0	Y0	X1
0	0	1	0	Z0	Y1	X0
0	0	1	1	Z0	Y1	X1
0	1	0	0	Z1	Y0	X0
0	1	0	1	Z1	Y0	X1
0	1	1	0	Z1	Y1	X0
0	1	1	1	Z1	Y1	X1
1	×	×	×	OPEN		

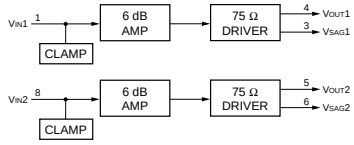
0 ; LOW LEVEL
1 ; HIGH LEVEL
×; DON'T CARE

NJM2267M(TE2)(JRC)FLAT PACKAGE

6 dB VIDEO AMPLIFIER

—TOP VIEW—

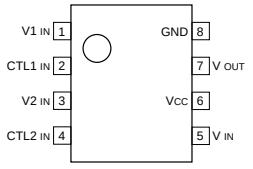


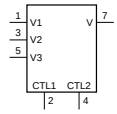


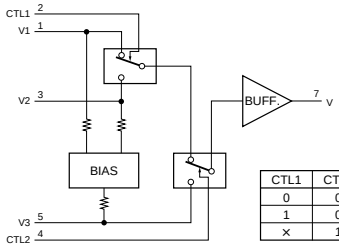
NJM2534M(TE2)(JRC)FLAT PACKAGE

3-INPUT VIDEO SIGNAL SWITCH

—TOP VIEW—







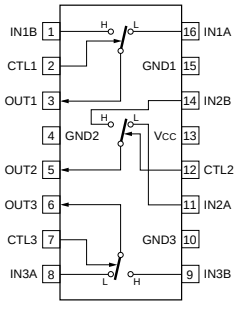
CTL1	CTL2	V
0	0	V1
1	0	V2
×	1	V3

0 : LOW LEVEL
1 : HIGH LEVEL
× : DON'T CARE

NJM2283M-TE1(JRC)FLAT PACKAGE

3-CIRCUIT 2-INPUT SIGNAL SWITCH FOR TV AND VTR

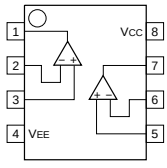
—TOP VIEW—



NJM4558D-D(JRC)
NJM4558M-TE2
UPC4558G2(NEC)

DUAL OPERATIONAL AMPLIFIERS
(DUAL-SUPPLY TYPE)

–TOP VIEW–

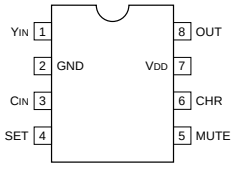


TYPE	VCC	VEE
062/072/082/4556A/ M5218/BA15218/ 33178/34182 TYPES	+2 to +16V	−2 to −16V
4580 TYPE	+2 to +18V	−2 to −18V
5532 TYPE	+3 to +20V	−3 to −20V
CXA1297 TYPE	+5 to +12V	−5 to −12V
M5219/M5220 TYPES	+5 to +22.5V	−5 to −22.5V
NJM2100 TYPE	+1 to +3.5V	−1 to −3.5V
OP-297 TYPE	+2 to +20V	−2 to −20V
OTHERS	+5 to +16V	−5 to −16V

NJM2509V(TE1)(JRC)

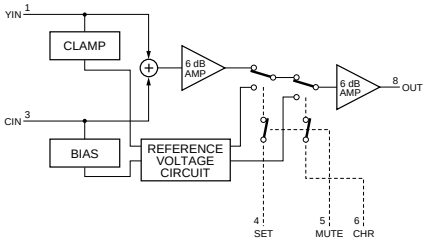
VIDEO SUPER-IMPOSER WITH Y-C MIX CIRCUIT

—TOP VIEW—



INPUT
CIN : CHROMA SIGNAL
CHR : CHARACTER
MUTE : MUTING
SET : CHARACTER
YIN : Y SIGNAL

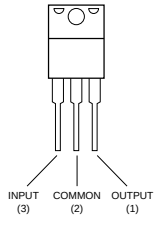
OUTPUT
OUT : COMPOSITE SIGNAL

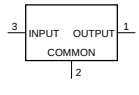


NJM7805FA(JRC)+5V(1 A)
NJM7809FA(JRC)+9V(1 A)

POSITIVE VOLTAGE REGULATOR

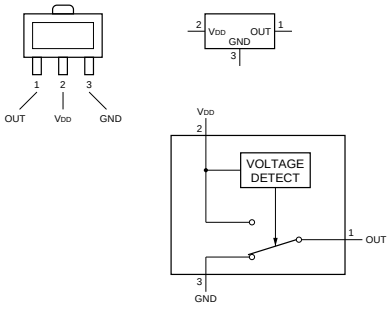
—FRONT VIEW—





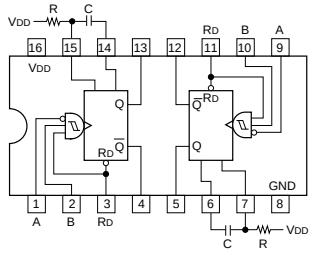
S-80743AL-A7-S(SEIKO I AND E)4.196-4.404V
S-80743AL-A7-T1

C-MOS VOLTAGE DETECTOR
-TOP VIEW-



TC74HC221AF(TOSHIBA)FLAT PACKAGE
TC74HC221AF(EL)

C-MOS MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
-TOP VIEW-



INPUTS			OUTPUTS	
RD	A	B	Q	$\overline{Q}$
0	×	×	0	1
×	1	×	0	1
×	×	0	0	1
1	0	↑	⎍	⎍
1	↓	1	⎍	⎍
↑	0	1	⎍	⎍

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE

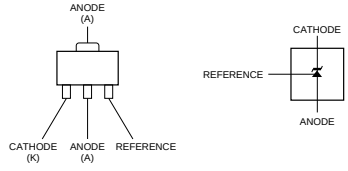
OUTPUT PULSE WIDTH = 0.7CR

NOTE:

TYPE	VDD
74AC/74VHC	+2 to +5.5V
74HCT	+4.5 to +5.5V
74HC	+2 to +6V

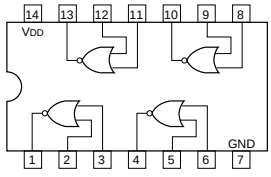
UPC1093T(NEC)
UPC1093T-E1

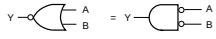
REGULATOR (VARIABLE VOLTAGE SHUNT)
-TOP VIEW-



SN74HC02ANS(TI)FLAT PACKAGE
SN74HC02ANS-E05

C-MOS QUAD 2-INPUT NOR GATES
-TOP VIEW-





$Y = \overline{A} + \overline{B} = \overline{A} \cdot \overline{B}$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

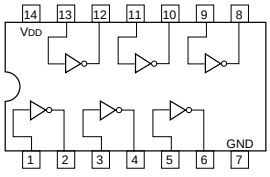
0 ; LOW LEVEL
1 ; HIGH LEVEL

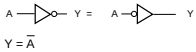
NOTE:

TYPE	VDD
74HC	+2 to +6V
74AC/74VHC	+2 to +5.5V
74HCT/74ACT	+4.5 to +5.5V
74LCX	+2 to +3.6V

SN74HC04ANS(TI)FLAT PACKAGE
SN74HC04ANS-E05

C-MOS HEX INVERTERS
-TOP VIEW-





$Y = \overline{A}$

A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

NOTE:

TYPE	VDD
74AC/74VHC/74VHCT	+2 to +5.5V
74ACT/74HCT	+4.5 to +5.5V
74LCX	+2 to +3.6V
OTHER TYPE	+2 to +6V

SECTION 5
SPARE PARTS

5-1. NOTES ON REPAIR PARTS

(1) Safety Related Components Warning
Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

(2) Standardization of Parts
Repair parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to “accommodating the improved parts and/or engineering changes” or “standardization of genuine parts”.
This manual's exploded views and electrical spare parts list are indicating the part numbers of “the standardized genuine parts at present” .

(3) Stock of Parts
Parts marked with “o” SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with “o” will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors
The following units are assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : μF
Inductors : μH
Resistors : Ω

5−1. 補修部品注意事項

(1) 安全重要部品

⚠警告

⚠印のついた部品は安全性を維持するために重要な部品です。したがって，交換する時は必ず指定の部品を使ってください。

(2) 部品の共通化

ソニーから供給される部品は，セットに実装されているものと異なることがあります。これは部品の共通化，改良等によるものです。
分解図や電気部品表には現時点での共通化された部品が記載されています。

(3) 部品の在庫

部品表のSP (Supply code) 欄に“o”で示される部品は交換頻度が低い部品ですので在庫していないことがあり，納期が長くなることがあります。

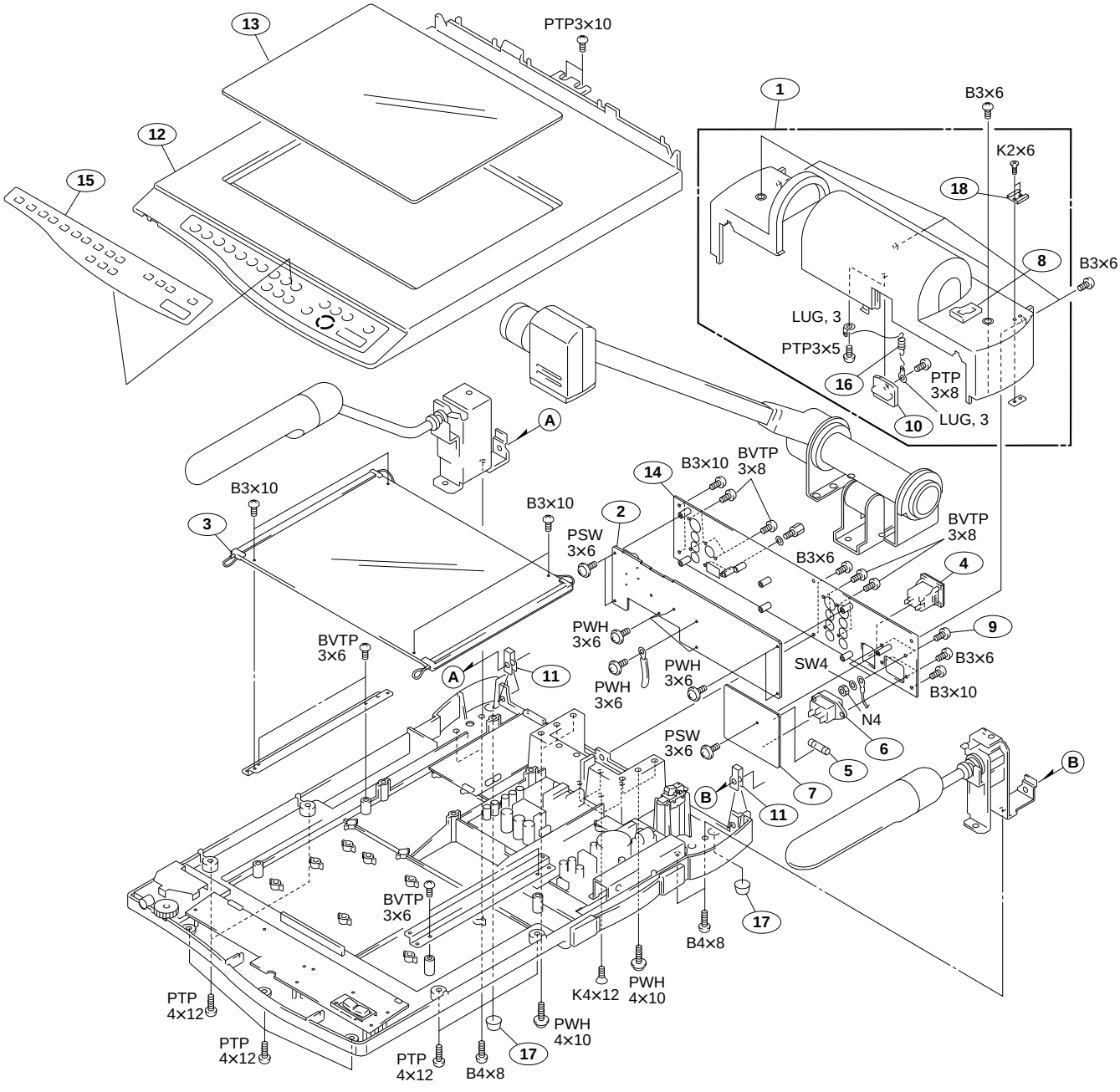
(4) コンデンサ，インダクタ，抵抗の単位

回路図，分解図，電気部品表中，特に明記したものを除き，下記の単位は省略されています。

コンデンサ : μF
インダクタ : μH
抵抗 : Ω

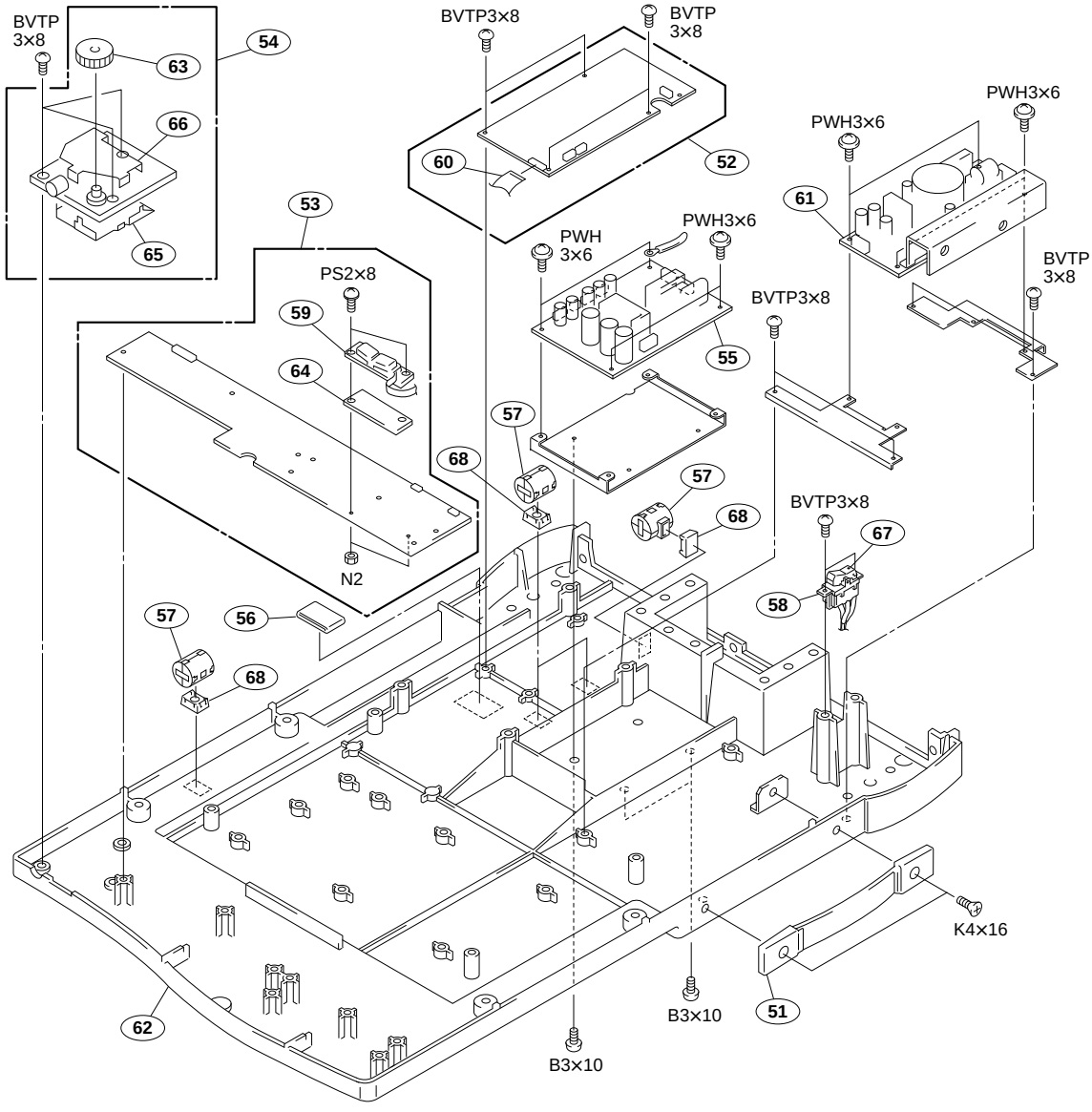
5-2. EXPLODED VIEW

Cabinet and Rear Panel Block



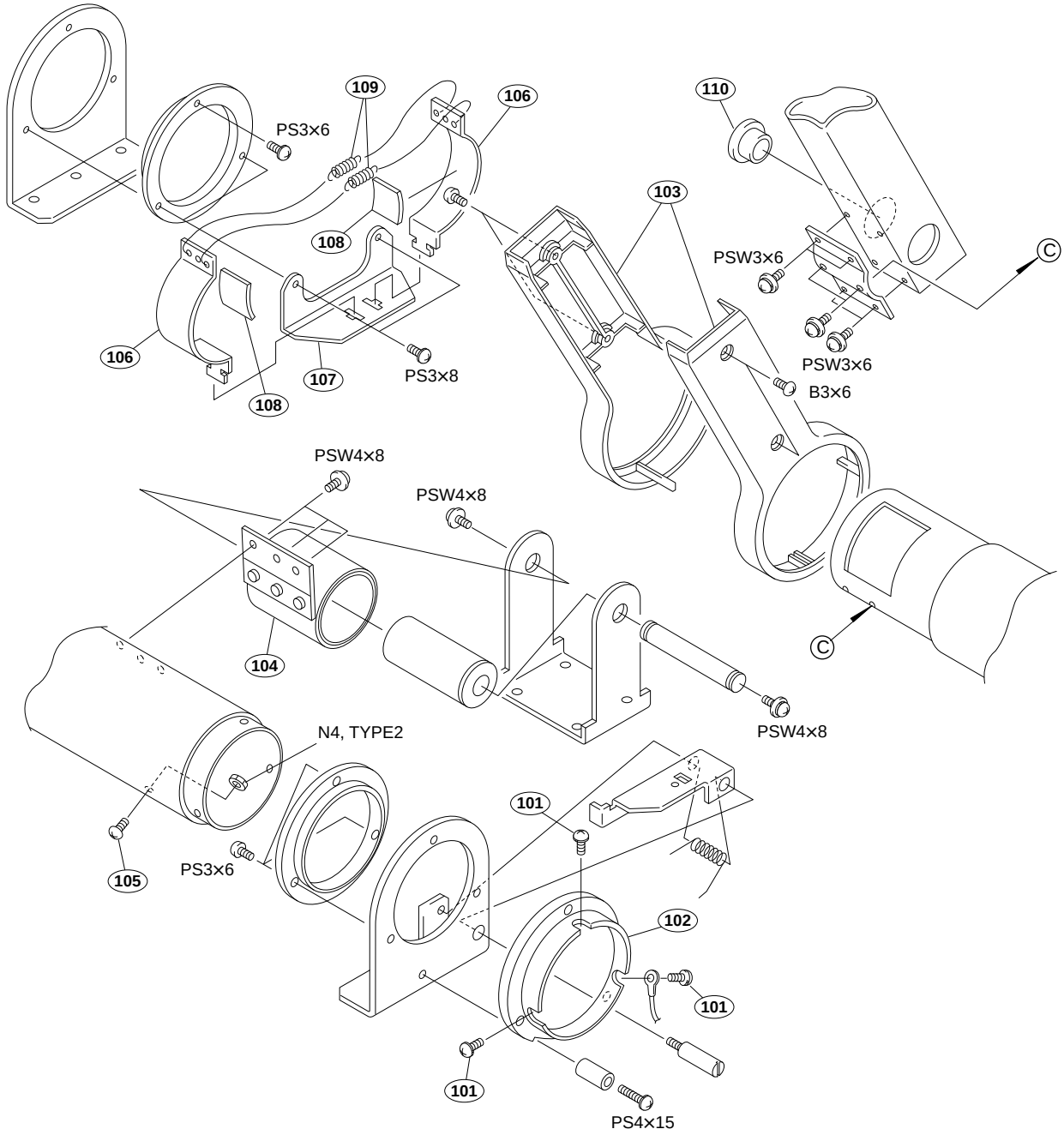
No.	Part No.	SP	Description
1	A-8319-904-A	o	COVER ASSY (for J, UC)
	A-8320-831-A	o	COVER ASSY (for CE)
2	A-8319-970-A	o	MOUNTED CIRCUIT BOARD, VSW-60(A) (for J, UC)
	A-8319-797-A	o	MOUNTED CIRCUIT BOARD, VSW-60(A) (for CE)
3	1-418-048-11	s	BACK LIGHT ASSY
4	⚠1-526-920-12	s	AC OUTLET (WITH EARTH) (for J, UC)
5	⚠1-532-744-11	s	FUSE, GLASS TUBE 2.5 A 125 V (for J, UC)
	⚠1-532-286-00	s	FUSE, TIME-LAG 2.5A 250 V (for CE)
6	⚠1-580-375-11	s	INLET 3P
7	1-671-130-11	o	PRINTED CIRCUIT BOARD, PS-526
8	2-251-642-01	o	GUARD, POWER SWITCH (for J, UC)
	4-604-107-11	o	GUARD, POWER SWITCH (for CE)
9	3-178-775-01	o	SCREW, POWER GROUND
10	3-186-510-01	o	KNOB
11	3-186-615-01	o	BRACKET, GROUND
12	3-200-385-01	o	TABLE
13	3-200-589-01	o	PLATE, STAGE
14	3-200-599-02	o	PANEL, REAR (for UC)
	3-200-600-01	o	PANEL, REAR (for J)
	3-200-601-01	o	PANEL, REAR (for CE)
15	3-200-602-01	o	PANEL, CONTROL (for UC, CE)
	3-200-603-01	o	PANEL, CONTROL (for J)
16	3-447-073-00	s	SPRING, TENSION
17	3-682-930-00	o	LEG, RUBBER (ROUND)
18	3-724-511-02	o	SHOE, ACCESSORY

Printed Circuit Boards



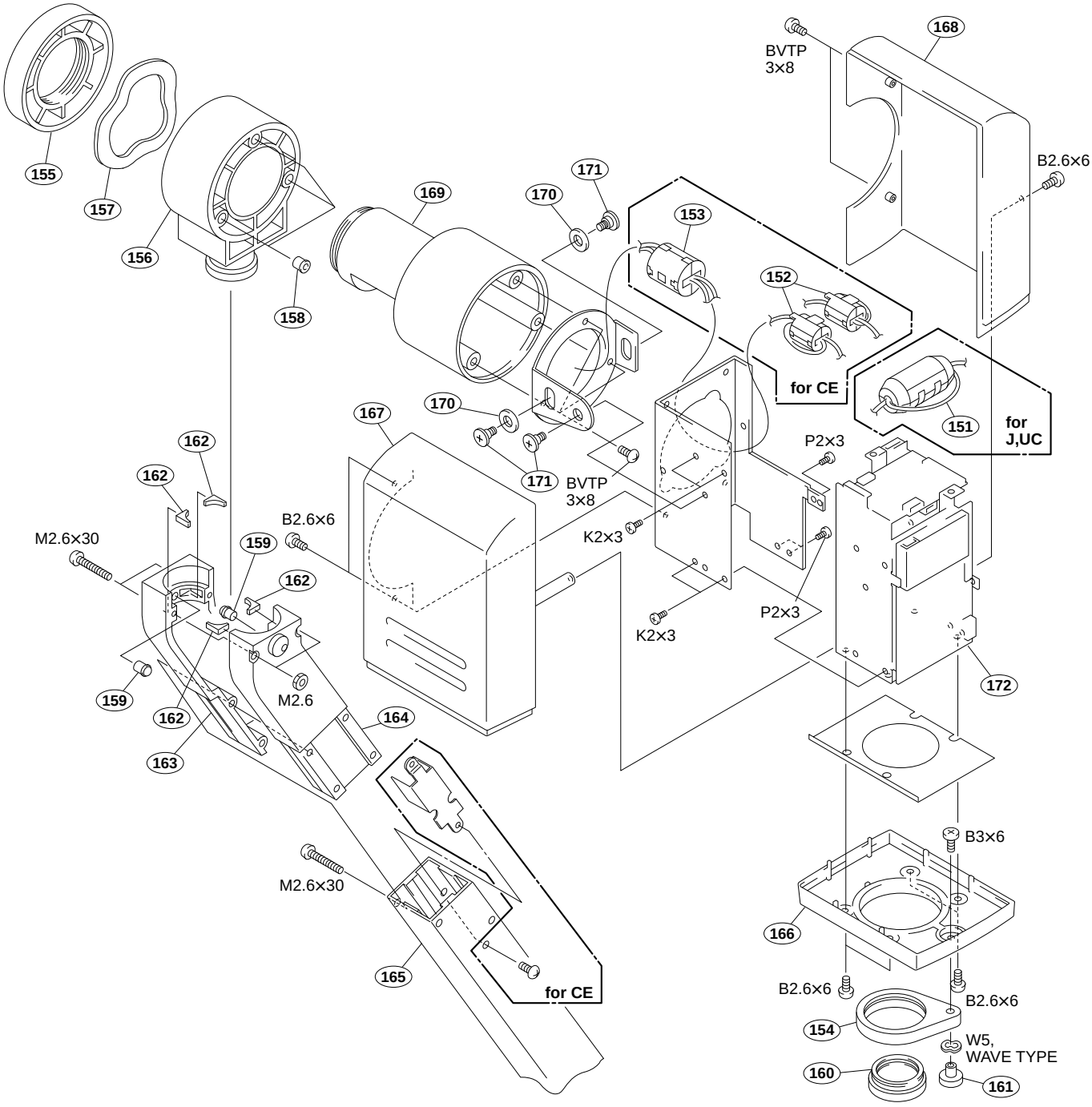
No.	Part No.	SP	Description
51	A-8314-860-A	o	HANDLE ASSY
52	A-8319-953-A	o	MOUNTED CIRCUIT BOARD, SY-248
53	A-8319-956-A	o	MOUNTED CIRCUIT BOARD, KSW-40
54	A-8319-957-A	o	MOUNTED CIRCUIT BOARD, MA-87
55	A-8319-967-A	o	MOUNTED CIRCUIT BOARD, PS-517
56	1-500-422-11	s	BEAD, FERRITE (for CE)
57	1-543-993-11	s	CORE, FERRITE (for CE)
58	⚠ 1-570-117-51	s	SWITCH, POWER
59	1-692-257-11	s	SWITCH, PUSH (ZOOM)
60	1-769-207-11	o	WIRE, FLAT TYPE (FFC•CONNECTOR)
61	⚠ 1-468-346-11	s	REGULATOR, SWITCHING
62	3-186-155-04	o	CHASSIS
63	3-186-520-01	o	KNOB
64	3-186-638-03	o	SPACER, ZOOM SWITCH
65	3-186-639-01	o	PLATE, SHIELD, MICROPHONE (B)
66	3-186-640-01	o	PLATE, SHIELD, MICROPHONE (A)
67	3-688-814-11	s	CAP, SWITCH
68	4-053-463-01	o	HOLDER (S), CORE (for CE)

Drum



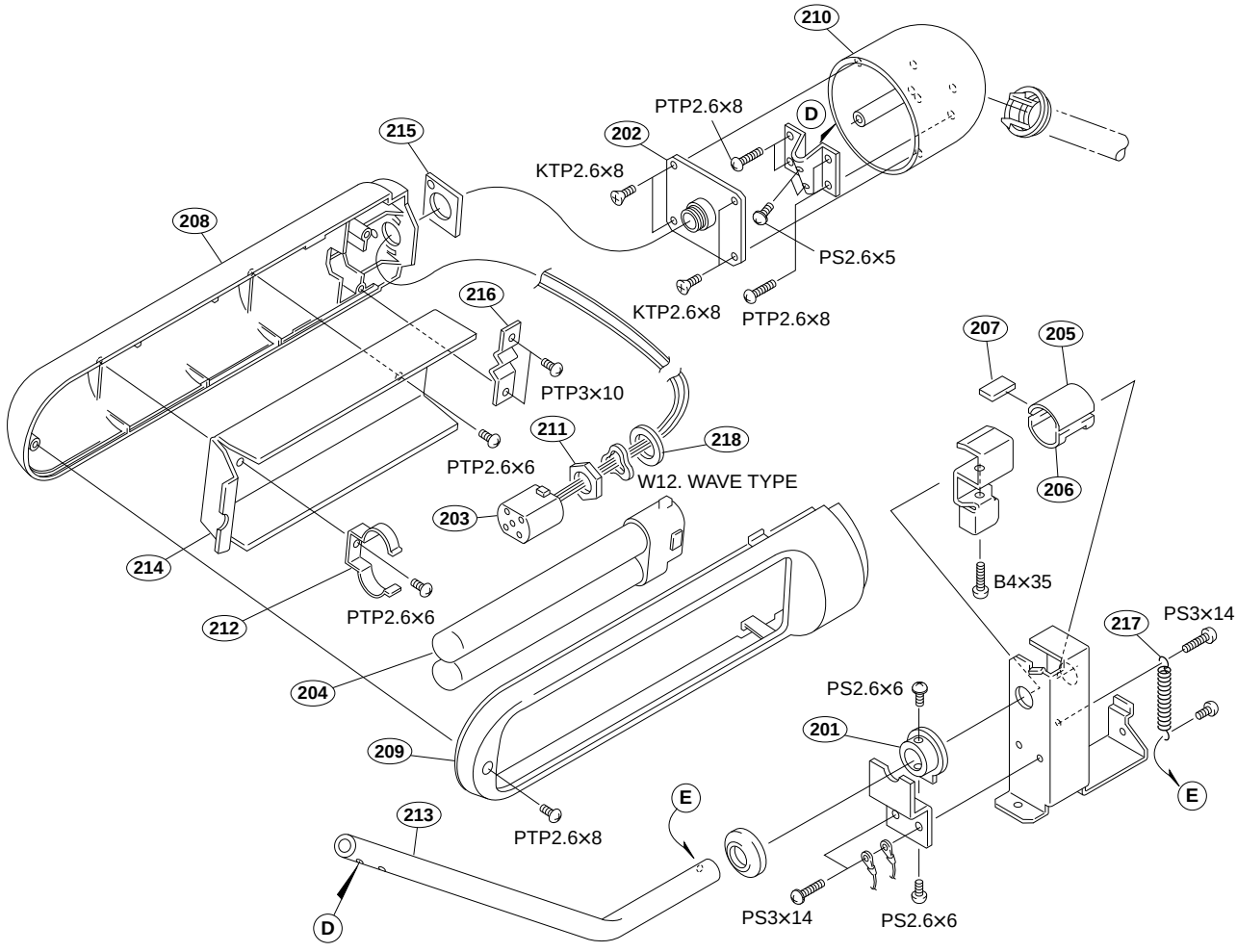
No.	Part No.	SP	Description
101	2-625-741-01	o	SCREW (M3x6), PSW
102	3-186-518-01	o	RING, CLICK
103	3-186-519-01	o	COVER, ARM
104	3-186-624-01	o	SPRING (for J, UC)
	3-201-467-01	o	SPRING (4), LOW WEIGHTING (for CE)
105	3-186-790-01	o	STOPPER
106	3-187-377-01	o	ARM, BRAKE
107	3-187-378-01	o	BRACKET, BRAKE
108	3-187-379-02	s	SHOE, BRAKE
109	3-437-288-00	o	SPRING, TENSION
110	3-723-749-01	o	BUSHING, SNAP

Camera Block



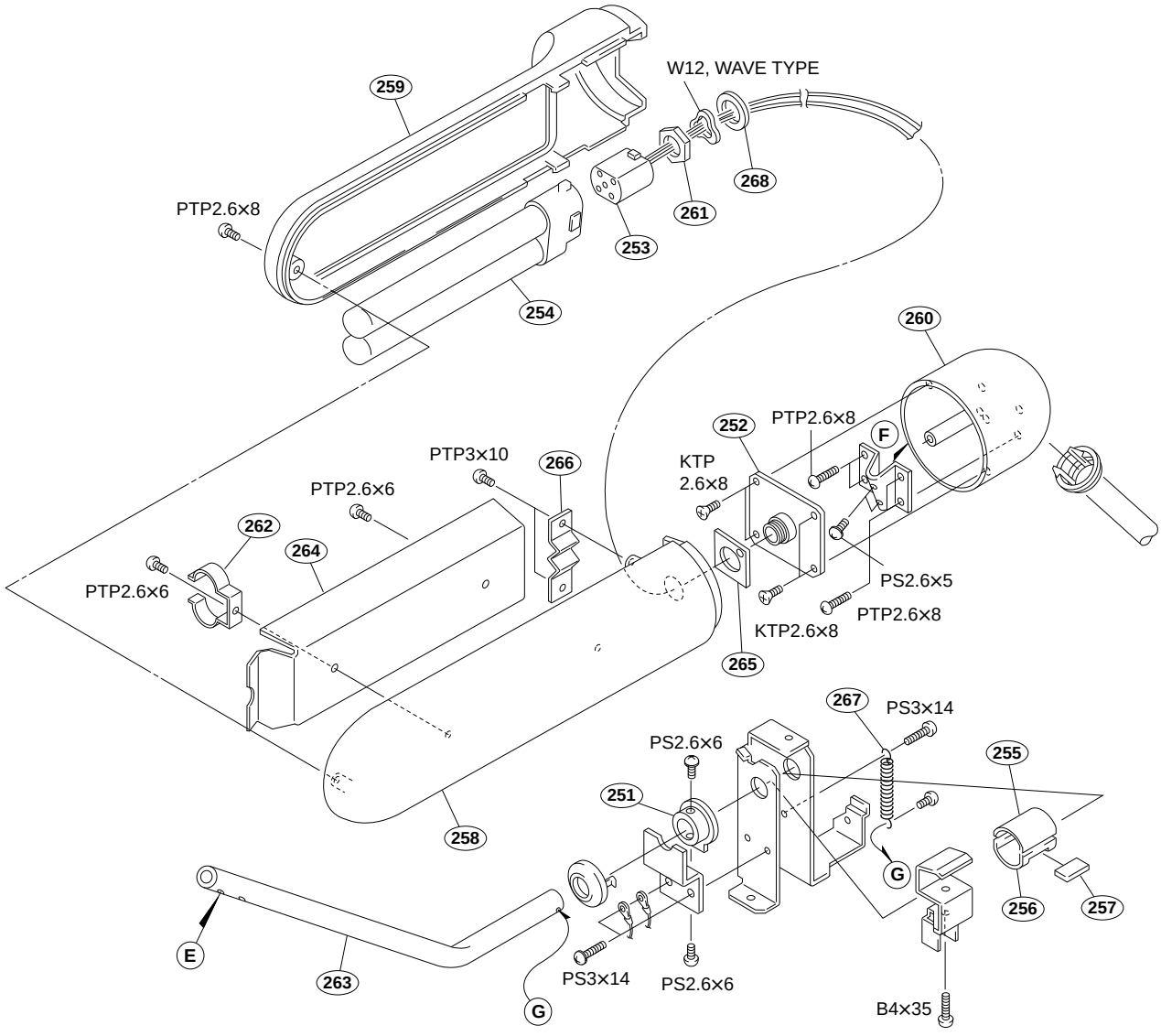
No.	Part No.	SP	Description
151	1-500-051-11	s	BEAD, FERRITE (WITH CASE) (for J, UC)
152	1-500-082-11	s	CLAMP, SLEEV FERRITE (for CE)
153	1-543-993-11	s	CORE, FERRITE (for CE)
154	3-186-513-02	o	FRAME, C LENS
155	3-186-516-01	o	CAP
156	3-186-521-01	o	BEARING (A)
157	3-186-616-01	s	WAVED WASHER (BWW6303)
158	3-186-617-01	s	SOLENOID, BALL
159	3-186-618-01	s	SOLENOID, BALL
160	3-186-635-01	s	LENS, CLOSE UP
161	3-186-637-01	o	SCREW, FITTING
162	3-188-679-01	s	SHOE, BRAKE (A)
163	3-188-682-01	o	JOINT (A)
164	3-188-683-01	o	JOINT (B)
165	3-188-684-01	o	ARM (for J, UC)
	3-201-468-01	o	ARM (for CE)
166	3-200-386-01	o	FRAME, FRONT (for J, UC)
	3-201-519-01	o	FRAME, FRONT (for CE)
167	3-200-387-01	o	CASE (A) (for J, UC)
	3-201-520-01	o	CASE (A) (for CE)
168	3-200-388-01	o	CASE (B) (for J, UC)
	3-201-521-01	o	CASE (B) (for CE)
169	3-200-590-01	o	SHAFT, PIPE
170	3-200-596-01	o	SPACER, CAMERA FIXED
171	3-613-164-00	o	SHAFT, STEP
172	A-8321-711-A	s	CAMERA ASSY (N)
	A-8321-749-A	s	CAMERA ASSY (P)

Lighting (Left) Block



No.	Part No.	SP	Description
201	X-3167-619-2	o	STOPPER ASSY, ROTARY
202	X-3167-625-1	o	JOINT ASSY, SHADE
203	1-251-253-11	s	SOCKET
204	1-517-371-11	s	FLUORESCENT LAMP (9 W)
205	3-176-689-01	o	SHOE (UPPER), BRAKE
206	3-176-690-01	o	SHOE (LOWER), BRAKE
207	3-176-692-01	o	SUPPORT, BRAKE
208	3-186-531-01	o	LAMP SHADE A
209	3-186-532-01	o	LAMP SHADE B
210	3-186-533-01	o	LAMP SHADE C
211	3-186-628-01	o	NUT, M10
212	3-186-629-01	o	BRACKET, LAMP HOLDING
213	3-186-646-01	o	ARM, LAMP
214	3-186-647-01	o	REFLECTOR
215	3-187-341-01	o	PLATE, FRICTION
216	3-187-342-01	o	PLATE, FIXED, SOCKET
217	3-200-823-01	o	SPRING (A), GROUND
218	3-701-448-21	s	WASHER, 12

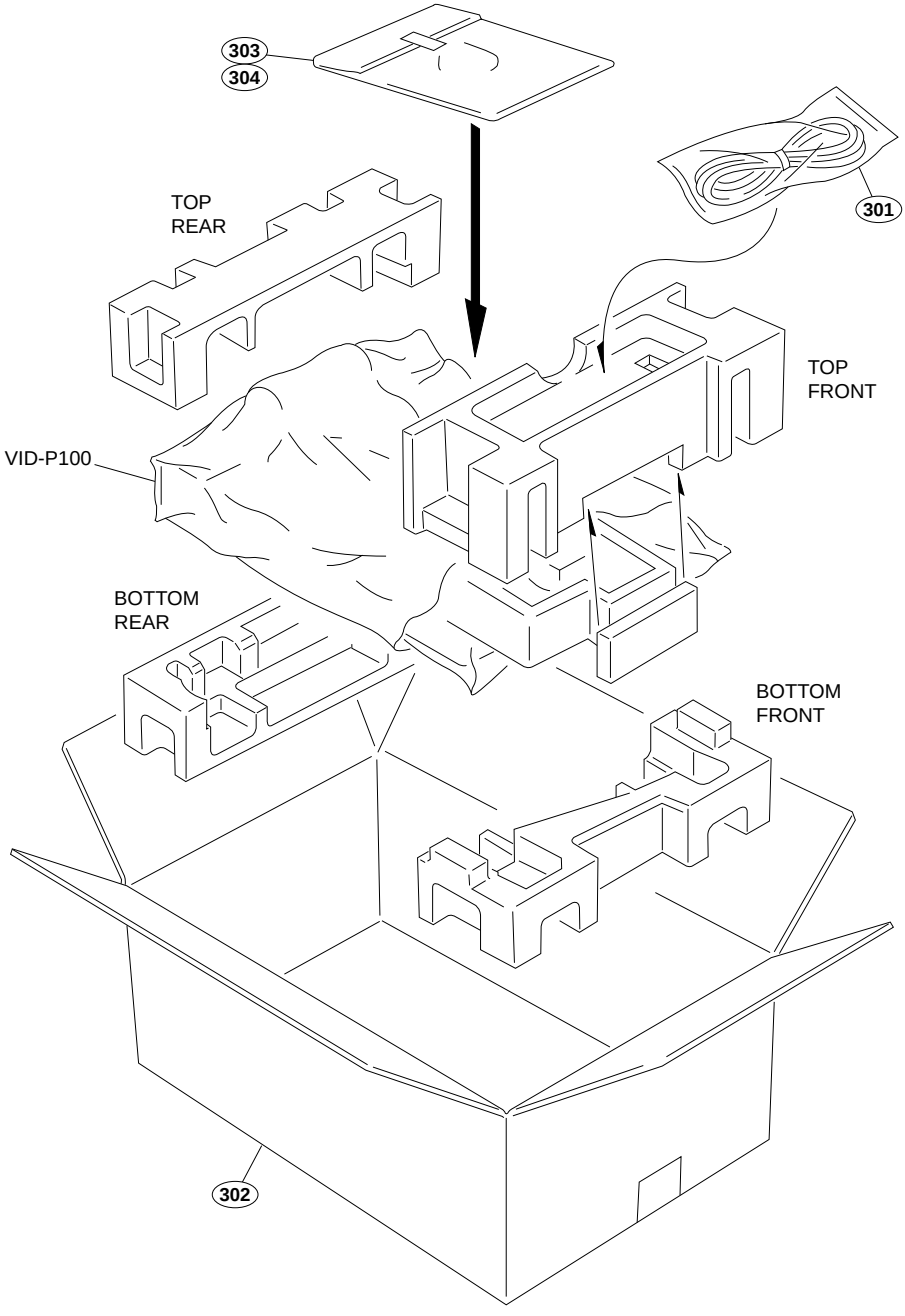
Lighting (Right) Block



No.	Part No.	SP	Description
251	X-3167-619-2	o	STOPPER ASSY, ROTARY
252	X-3167-625-1	o	JOINT ASSY, SHADE
253	1-251-253-11	s	SOCKET
254	1-517-371-11	s	FLUORESCENT LAMP (9 W)
255	3-176-689-01	o	SHOE (UPPER), BRAKE
256	3-176-690-01	o	SHOE (LOWER), BRAKE
257	3-176-692-01	o	SUPPORT, BRAKE
258	3-186-531-01	o	LAMP SHADE A
259	3-186-532-01	o	LAMP SHADE B
260	3-186-533-01	o	LAMP SHADE C

No.	Part No.	SP	Description
261	3-186-628-01	o	NUT, M10
262	3-186-629-01	o	BRACKET, LAMP HOLDING
263	3-186-646-01	o	ARM, LAMP
264	3-186-647-01	o	REFLECTOR
265	3-187-341-01	o	PLATE, FRICTION
266	3-187-342-01	o	PLATE, FIXED, SOCKET
267	3-200-824-01	o	SPRING (B), GROUND
268	3-701-448-21	s	WASHER, 12

5-3. PACKING MATERIALS AND ACCESSORIES



No.	Part No.	SP	Description
301	⚠1-551-812-11	s	CORD, POWER (for UC)
	⚠1-782-059-11	s	CORD, POWER (for J)
	⚠1-782-929-11	s	CORD, POWER SUPPLY (BS 3P) (for CE)
302	3-200-888-01	s	INDIVIDUAL CARTON
303	3-864-451-01	s	MANUAL, INTERFACE (for J)
	3-864-451-11	s	MANUAL, INTERFACE (for UC, CE)
304	3-864-452-01	s	MANUAL, INSTRUCTION (for J)
	3-864-452-11	s	MANUAL, INSTRUCTION (for UC, CE)

5-4. ELECTRICAL PARTS LIST

KSW-40 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8319-956-A	o	MOUNTED CIRCUIT BOARD,KSW-40
1pc	1-692-257-11	s	SWITCH,PUSH(ZOOM)
1pc	3-186-638-03	o	SPACER,ZOOM SWITCH
2pcs	7-628-253-35	s	SCREW +PS 2x8
2pcs	7-622-205-05	s	NUT M2 TYPE2
C1	1-164-159-21	s	CERAMIC 0.1uF 50V
C2	1-164-159-21	s	CERAMIC 0.1uF 50V
C3	1-164-159-21	s	CERAMIC 0.1uF 50V
C4	1-164-159-21	s	CERAMIC 0.1uF 50V
CN1	1-770-523-31	o	CONNECTOR,FFC/FPC 16P
CN2	1-563-995-11	s	CONNECTOR,FPC(ZIF) 5P
CN3	1-506-481-11	s	PIN,CONNECTOR 2P
D1	8-719-046-70	s	DIODE SEL5620C
D4	8-719-046-70	s	DIODE SEL5620C
D5	8-719-046-70	s	DIODE SEL5620C
D6	8-719-046-70	s	DIODE SEL5620C
D7	8-719-046-70	s	DIODE SEL5620C
D8	8-719-046-70	s	DIODE SEL5620C
D9	8-719-046-70	s	DIODE SEL5620C
D10	8-719-046-70	s	DIODE SEL5620C
D11	8-719-046-70	s	DIODE SEL5620C
D14	8-719-911-19	s	DIODE 1SS119-25
D15	8-719-911-19	s	DIODE 1SS119-25
D16	8-719-911-19	s	DIODE 1SS119-25
D17	8-719-109-93	s	DIODE RD6.2ESB2
R1	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R2	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R3	1-249-436-11	s	CARBON 39K 5% 1/4W
R4	1-249-434-11	s	CARBON 27K 5% 1/4W
S1	1-570-969-11	s	SWITCH,KEY BOARD
S2	1-570-969-11	s	SWITCH,KEY BOARD
S3	1-570-969-11	s	SWITCH,KEY BOARD
S4	1-570-969-11	s	SWITCH,KEY BOARD
S5	1-570-969-11	s	SWITCH,KEY BOARD
S6	1-570-969-11	s	SWITCH,KEY BOARD
S7	1-570-969-11	s	SWITCH,KEY BOARD
S8	1-570-969-11	s	SWITCH,KEY BOARD
S9	1-570-969-11	s	SWITCH,KEY BOARD
S10	1-570-969-11	s	SWITCH,KEY BOARD
S11	1-570-969-11	s	SWITCH,KEY BOARD
S12	1-570-969-11	s	SWITCH,KEY BOARD
S13	1-570-969-11	s	SWITCH,KEY BOARD
S14	1-570-969-11	s	SWITCH,KEY BOARD
S15	1-570-969-11	s	SWITCH,KEY BOARD
S16	1-570-969-11	s	SWITCH,KEY BOARD
S18	1-570-969-11	s	SWITCH,KEY BOARD

MA-87 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8319-957-A	o	MOUNTED CIRCUIT BOARD,MA-87
1pc	3-186-639-01	o	PLATE,SHIELD,MICROPHONE(B)
1pc	3-186-640-01	o	PLATE,SHIELD,MICROPHONE(A)
C801	1-126-960-11	s	ELECT 0.1uF 20% 50V
C802	1-126-964-11	s	ELECT 10uF 20% 50V
C803	1-162-219-31	s	CERAMIC 68pF 5% 50V
C804	1-126-960-11	s	ELECT 0.1uF 20% 50V
C805	1-126-960-11	s	ELECT 0.1uF 20% 50V
C806	1-162-205-31	s	CERAMIC 18pF 5% 50V
C807	1-126-964-11	s	ELECT 10uF 20% 50V
C808	1-126-933-11	s	ELECT 100uF 20% 16V
C809	1-162-219-31	s	CERAMIC 68pF 5% 50V
C810	1-164-159-21	s	CERAMIC 0.1uF 50V
C811	1-162-219-31	s	CERAMIC 68pF 5% 50V
C812	1-126-964-11	s	ELECT 10uF 20% 50V
C813	1-126-964-11	s	ELECT 10uF 20% 50V
C814	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
CN801	1-564-002-11	s	PIN,CONNECTOR 3P
IC801	8-759-705-58	s	IC NJM4558D-D
J801	1-507-854-00	s	JACK
Q801	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
R801	1-249-441-11	s	CARBON 100K 5% 1/4W
R802	1-249-441-11	s	CARBON 100K 5% 1/4W
R803	1-247-843-11	s	CARBON 3.3K 5% 1/4W
R804	1-249-439-11	s	CARBON 68K 5% 1/4W
R805	1-249-429-11	s	CARBON 10K 5% 1/4W
R806	1-247-891-00	s	CARBON 330K 5% 1/4W
R807	1-247-843-11	s	CARBON 3.3K 5% 1/4W
R808	1-249-429-11	s	CARBON 10K 5% 1/4W
R809	1-249-411-11	s	CARBON 330 5% 1/4W
RV801	1-241-682-11	s	RES,VAR,CARBON 20K J MODEL:S/N 10,001 - 10,120 UC MODEL:S/N 70,001 - 71,081 CED MODEL:S/N 50,001 - 50,300
	1-230-661-11	s	RES,VAR,CARBON 10K J MODEL:S/N 10,121 AND HIGHER UC MODEL:S/N 71,082 AND HIGHER CED MODEL:S/N 50,301 AND HIGHER

PS-517 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8319-967-A	o	MOUNTED CIRCUIT BOARD,PS-517
C1	1-126-936-11	s	ELECT 3300uF 20% 16V
C2	1-137-378-11	s	FILM 0.22uF 5% 50V
C3	1-137-370-11	s	FILM 0.01uF 5% 50V
C4	1-137-370-11	s	FILM 0.01uF 5% 50V
C5	1-126-767-11	s	ELECT 1000uF 20% 16V
C6	1-137-370-11	s	FILM 0.01uF 5% 50V
C7	1-137-370-11	s	FILM 0.01uF 5% 50V
C8	1-126-767-11	s	ELECT 1000uF 20% 16V
C9	1-137-370-11	s	FILM 0.01uF 5% 50V
C10	1-126-936-11	s	ELECT 3300uF 20% 16V
C11	1-137-378-11	s	FILM 0.22uF 5% 50V
C12	1-137-378-11	s	FILM 0.22uF 5% 50V
C13	1-126-767-11	s	ELECT 1000uF 20% 16V
C14	1-137-370-11	s	FILM 0.01uF 5% 50V
C15	1-137-370-11	s	FILM 0.01uF 5% 50V
C16	1-126-936-11	s	ELECT 330uF 20% 16V
C17	1-137-378-11	s	FILM 0.22uF 5% 50V
C18	1-137-378-11	s	FILM 0.22uF 5% 50V
C19	1-126-767-11	s	ELECT 1000uF 20% 16V
C20	1-137-370-11	s	FILM 0.01uF 5% 50V
C21	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C22	1-164-159-11	s	CERAMIC 0.1uF 50V
C23	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C24	1-126-767-11	s	ELECT 1000uF 20% 16V
C25	1-137-370-11	s	FILM 0.01uF 5% 50V
C26	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C27	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C28	1-164-159-11	s	CERAMIC 0.1uF 50V
C29	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C30	1-129-720-00	s	FILM 0.033uF 5% 400V
C31	1-129-955-00	s	FILM 0.15uF 5% 630V
C32	1-127-568-11	s	CERAMIC 4700pF 10% 2KV
C33	1-127-568-11	s	CERAMIC 4700pF 10% 2KV
C34	1-127-568-11	s	CERAMIC 4700pF 10% 2KV
C35	1-127-568-11	s	CERAMIC 4700pF 10% 2KV
C36	1-127-568-11	s	CERAMIC 4700pF 10% 2KV
C37	1-127-568-11	s	CERAMIC 4700pF 10% 2KV
C38	1-164-159-11	s	CERAMIC 0.1uF 50V
C39	1-126-934-11	s	ELECT 220uF 20% 16V
C40	1-164-159-11	s	CERAMIC 0.1uF 50V
C41	1-164-159-11	s	CERAMIC 0.1uF 50V
CN1	1-580-838-11	o	PIN,CONNECTOR(PC BOARD) 4P
CN2	1-564-001-11	o	PIN,CONNECTOR 2P
CN3	1-506-469-11	o	PIN,CONNECTOR 4P
CN4	1-564-005-11	o	PIN,CONNECTOR 6P
CN5	1-564-507-11	o	PLUG,CONNECTOR 4P
CN6	1-691-960-21	o	PIN,CONNECTOR(PC BOARD) 3P
CN7	1-691-960-21	o	PIN,CONNECTOR(PC BOARD) 3P
D1	8-719-200-82	s	DIODE 11ES-B2
D2	8-719-200-82	s	DIODE 11ES-B2
D3	8-719-110-22	s	DIODE RD11ES-B2
D4	8-719-109-97	s	DIODE RD6.8ES-B2
D5	8-719-200-82	s	DIODE 11ES-B2

(PS-517 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D6	8-719-200-82	s	DIODE 11ES-B2
D7	8-719-200-82	s	DIODE 11ES-B2
D8	8-719-110-41	s	DIODE RD15ES-B2
D9	8-719-110-41	s	DIODE RD15ES-B2
D10	8-719-200-82	s	DIODE 11ES-B2
D11	8-719-110-41	s	DIODE RD15ES-B2
IC1	8-759-701-59	s	IC NJM78M09FA
IC2	8-759-701-75	s	IC NJM7805FA
L1	1-412-529-31	s	INDUCTOR 22uH
L2	1-412-529-31	s	INDUCTOR 22uH
L3	1-412-529-31	s	INDUCTOR 22uH
L4	1-412-529-31	s	INDUCTOR 22uH
L5	1-402-764-11	s	INDUCTOR 120uH
PS1	⚠1-532-637-00	s	LINK,IC
PS2	⚠1-532-637-00	s	LINK,IC
PS3	⚠1-532-637-00	s	LINK,IC
PS4	⚠1-532-637-00	s	LINK,IC
PS5	⚠1-532-637-00	s	LINK,IC
PS6	⚠1-532-637-00	s	LINK,IC
PS7	⚠1-532-637-00	s	LINK,IC
Q1	8-729-205-95	s	TRANSISTOR 2SA1428-Y
Q2	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q3	8-729-205-95	s	TRANSISTOR 2SA1428-Y
Q4	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q5	8-729-133-42	s	TRANSISTOR 2SC2334-L
Q6	8-729-133-42	s	TRANSISTOR 2SC2334-L
R1	1-249-417-11	s	CARBON 1K 5% 1/4W
R2	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R3	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R4	1-215-867-00	s	METAL OXIDE 470 5% 1W F
R5	1-249-417-11	s	CARBON 1K 5% 1/4W
R6	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R7	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R8	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R9	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R10	1-215-869-00	s	METAL OXIDE 1K 5% 1/4W F
R11	1-215-869-00	s	METAL OXIDE 1K 5% 1/4W F
T1	1-433-451-11	s	TRANSFORMER,INVERTER

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PS-526 BOARD            FOR J MODEL:S/N 10,001 - 10,120
------------            FOR UC MODEL:S/N 70,001 - 71,030
Ref. No.
or Q'ty  Part No.    SP Description

1pc      1-671-130-11 o PRINTED CIRCUIT BOARD,PS-526
2pcs     1-533-189-11 o HOLDER,FUSE

C1      ⚠1-113-912-11 s CERAMIC 0.0047uF 20% 250V
C2      ⚠1-113-907-51 s CERAMIC 0.0022uF 20% 250V
C3      ⚠1-163-907-51 s CERAMIC 0.0022uF 20% 250V
C4      ⚠1-104-705-11 s FILM    0.1uF    20% 250v

CN3     ⚠1-779-661-11 o PIN,CONNECTOR(PC BOARD) 3P

L1      ⚠1-421-328-11 s INDUCTOR 0uH

R1      ⚠1-214-945-00 s METAL   2.2M  1%  1/2W
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------------            FOR J MODEL:S/N 10,121 AND HIGHER
PS-526 BOARD            FOR UC MODEL:S/N 71,031 AND HIGHER
------------            FOR CED MODEL:S/N 50,001 AND HIGHER
Ref. No.
or Q'ty  Part No.    SP Description

1pc      1-671-130-12 o PRINTED CIRCUIT BOARD,PS-526
2pcs     1-533-189-11 o HOLDER,FUSE

C1      ⚠1-113-912-11 s CERAMIC 0.0047uF 20% 250V
C2      ⚠1-113-912-11 s CERAMIC 0.0047uF 20% 250V
C3      ⚠1-113-912-11 s CERAMIC 0.0047uF 20% 250V
C4      ⚠1-104-706-11 s FILM    0.22uF   20% 250V

CN3     ⚠1-779-661-11 o PIN,CONNECTOR(PC BOARD) 3P

L1      ⚠1-424-450-11 s COIL,CHOKE 2.00mmH

R1      ⚠1-214-945-00 s METAL   2.2M  1%  1/2W
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SY-248 BOARD
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Ref. No.
or Q'ty  Part No.    SP Description

1pc      A-8319-953-A o MOUNTED CIRCUIT BOARD,SY-248

C1       1-163-038-91 s CERAMIC,CHIP 0.1uF      25V
C2       1-126-399-11 s ELECT,CHIP   10uF   20% 35V
C4       1-126-397-11 s ELECT,CHIP   33uF   20% 25V
C5       1-126-401-11 s ELECT,CHIP   1uF    20% 50V
C6       1-163-038-91 s CERAMIC,CHIP 0.1uF      25V

C9       1-163-038-91 s CERAMIC,CHIP 0.1uF      25V
C10      1-163-038-91 s CERAMIC,CHIP 0.1uF      25V
C11      1-126-399-11 s ELECT,CHIP   10uF   20% 35V
C12      1-126-399-11 s ELECT,CHIP   10uF   20% 35V
C13      1-126-399-11 s ELECT,CHIP   10uF   20% 35V

C14      1-126-399-11 s ELECT,CHIP   10uF   20% 35V
C20      1-126-401-11 s ELECT,CHIP   1uF    20% 50V
C21      1-163-251-11 s CERAMIC,CHIP 100pF   5% 50V
C22      1-163-251-11 s CERAMIC,CHIP 100pF   5% 50V
C25      1-163-229-11 s CERAMIC,CHIP 12pF    5% 50V

C26      1-163-229-11 s CERAMIC,CHIP 12pF    5% 50V

CN1      1-764-116-41 o PLUG,(D) SUB CONNECTOR 9P
CN5      1-564-005-11 o PIN,CONNECTOR 6P
CN7      1-564-002-11 s PIN,CONNECTOR 3P
CN8      1-564-005-11 o PIN,CONNECTOR 6P
CN10     1-770-523-31 o CONNECTOR,FFC/FPC 16P

D1       8-719-812-41 s DIODE TLR124
D2       8-719-812-41 s DIODE TLR124
D4       8-719-421-27 s DIODE MA728
D5       8-719-421-27 s DIODE MA728

FB2      1-543-775-11 s FERRITE 0uH
FB3      1-543-775-11 s FERRITE 0uH
FB4      1-543-775-11 s FERRITE 0uH
FB5      1-543-775-11 s FERRITE 0uH
FB6      1-543-775-11 s FERRITE 0uH

FB7      1-543-775-11 s FERRITE 0uH
FB8      1-543-775-11 s FERRITE 0uH
FB9      1-543-775-11 s FERRITE 0uH
FB11     1-543-775-11 s FERRITE 0uH

FL2      1-233-322-11 s FERRITE 0uH
FL5      1-233-322-11 s FERRITE 0uH
FL7      1-233-322-11 s FERRITE 0uH
FL8      1-233-322-11 s FERRITE 0uH
FL9      1-233-322-11 s FERRITE 0uH

FL10     1-233-322-11 s FERRITE 0uH
FL11     1-233-322-11 s FERRITE 0uH
FL12     1-233-322-11 s FERRITE 0uH
FL13     1-233-322-11 s FERRITE 0uH

IC1      8-752-898-97 s IC CXP846P480-1-011
IC2      8-759-065-85 s IC MAX232N
IC5      8-759-042-02 s IC S-80743AL-A7
IC6      8-759-433-52 s IC AT24C01A-10SC-#B
IC9      8-759-925-74 s IC SN74HC04ANS

IC10     8-752-899-00 s IC CXP84412-007Q

Q2       8-729-028-92 s TRANSISTOR DTA144TUA-T106
Q3       8-729-028-92 s TRANSISTOR DTA144TUA-T106
Q4       8-729-028-92 s TRANSISTOR DTA144TUA-T106
Q5       8-729-028-92 s TRANSISTOR DTA144TUA-T106
Q13      8-729-028-92 s TRANSISTOR DTA144TUA-T106

Q14      8-729-028-92 s TRANSISTOR DTA144TUA-T106
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(SY-248 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R3	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R4	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R8	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R11	1-216-033-00	s	RES,CHIP 220 5% 1/10W
R15	1-216-099-00	s	RES,CHIP 120K 5% 1/10W
R17	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R18	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R19	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R20	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R22	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R23	1-216-033-00	s	RES,CHIP 220 5% 1/10W
R24	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R25	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R26	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R27	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R28	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R29	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R30	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R31	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R32	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R33	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R34	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R35	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R36	1-216-033-00	s	RES,CHIP 220 5% 1/10W
R38	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R39	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R40	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R41	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R42	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R43	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R44	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R45	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R46	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R47	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R48	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R49	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R52	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R53	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R54	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R55	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R56	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R57	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R58	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R59	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R60	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R61	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R62	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R63	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R64	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R65	1-216-085-00	s	RES,CHIP 33K 5% 1/10W
R66	1-216-085-00	s	RES,CHIP 33K 5% 1/10W
R67	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R68	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R73	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R74	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R75	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R76	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R77	1-216-073-00	s	RES,CHIP 10K 5% 1/10W

(SY-248 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R78	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R79	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R80	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R81	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R82	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R83	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R85	1-216-085-00	s	RES,CHIP 33K 5% 1/10W
R86	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R87	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R89	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R92	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R93	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R94	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R95	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R96	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R97	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R98	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R99	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R100	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R101	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R102	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R103	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R104	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R105	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R106	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R107	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R108	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R109	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R110	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R111	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R112	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R113	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R114	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R115	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R116	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R117	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R118	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R119	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R120	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R121	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R122	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R123	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R124	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R125	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R126	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R127	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R128	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R129	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R130	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R131	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R132	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R133	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R134	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R135	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R136	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R137	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R138	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R139	1-216-073-00	s	RES,CHIP 10K 5% 1/10W

(SY-248 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description			
R140	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R141	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R142	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R143	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R144	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R145	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R146	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R147	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R148	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R149	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R150	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R151	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R152	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R153	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R154	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R160	1-216-057-00	s	RES,CHIP	2.2K	5%	1/10W
R161	1-216-097-91	s	RES,CHIP	100K	5%	1/10W
R162	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R164	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R166	1-216-025-91	s	RES,CHIP	100	5%	1/10W
R167	1-216-025-91	s	RES,CHIP	100	5%	1/10W
R168	1-216-025-91	s	RES,CHIP	100	5%	1/10W
R169	1-216-025-91	s	RES,CHIP	100	5%	1/10W
R176	1-216-025-91	s	RES,CHIP	100	5%	1/10W
R179	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R183	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
R1000	1-216-073-00	s	RES,CHIP	10K	5%	1/10W
X1	1-767-051-11	s	VIBRATOR,CRYSTAL 9.8304MHz			
X2	1-579-929-11	s	VIBRATOR,CRYSTAL 9.8300MHz			

VSW-60(A) BOARD

Ref. No. or Q'ty	Part No.	SP	Description			
1pc	A-8319-970-A	o	MOUNTED CIRCUIT BOARD,VSW-60(A) (FOR J,UC MODEL ONLY)			
	A-8319-797-A	o	MOUNTED CIRCUIT BOARD,VSW-60(A) (FOR CED MODEL ONLY)			
C1	1-128-499-11	s	ELECT	220uF	20%	16V
C2	1-126-193-11	s	ELECT,CHIP	1uF	20%	50V
C3	1-126-193-11	s	ELECT,CHIP	1uF	20%	50V
C4	1-126-193-11	s	ELECT,CHIP	1uF	20%	50V
C5	1-126-193-11	s	ELECT,CHIP	1uF	20%	50V
C6	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C7	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C8	1-163-133-00	s	CERAMIC,CHIP	470pF	5%	50V
C9	1-163-133-00	s	CERAMIC,CHIP	470pF	5%	50V
C10	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C11	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C12	1-126-204-11	s	ELECT,CHIP	47uF	20%	16V
C13	1-126-193-11	s	ELECT,CHIP	1uF	20%	50V
C14	1-163-113-00	s	CERAMIC,CHIP	68pF	5%	50V
C15	1-163-113-00	s	CERAMIC,CHIP	68pF	5%	50V
C16	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C17	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C18	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C19	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C20	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C21	1-126-204-11	s	ELECT,CHIP	47uF	20%	16V
C22	1-163-133-00	s	CERAMIC,CHIP	470pF	5%	50V
C23	1-163-133-00	s	CERAMIC,CHIP	470pF	5%	50V
C24	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C25	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C26	1-126-204-11	s	ELECT,CHIP	47uF	20%	16V
C27	1-126-204-11	s	ELECT,CHIP	47uF	20%	16V
C28	1-126-193-11	s	ELECT,CHIP	1uF	20%	50V
C29	1-126-193-11	s	ELECT,CHIP	1uF	20%	50V
C30	1-163-133-00	s	CERAMIC,CHIP	470pF	5%	50V
C31	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C32	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C101	1-165-319-11	s	CERAMIC.CHIP	0.1uF		50V
C102	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C103	1-163-133-00	s	CERAMIC,CHIP	470pF	5%	50V
C104	1-126-204-11	s	ELECT,CHIP	47uF	20%	16V
C105	1-126-204-11	s	ELECT,CHIP	47uF	20%	16V
C106	1-165-319-11	s	CERAMIC,CHIP	0.1uF		50V
C107	1-126-204-11	s	ELECT,CHIP	47uF	20%	16V
C108	1-126-204-11	s	ELECT,CHIP	47uF	20%	16V
C109	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C110	1-124-779-00	s	ELECT,CHIP	10uF	20%	16V
C111	1-165-319-11	s	CERAMIC.CHIP	0.1uF		50V
C112	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C114	1-163-133-00	s	CERAMIC,CHIP	470pF	5%	50V
C115	1-163-275-11	s	CERAMIC,CHIP	0.001uF	5%	50V
C116	1-117-681-11	s	ELECT,CHIP	100uF	20%	16V
C117	1-117-681-11	s	ELECT,CHIP	100uF	20%	16V
C118	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V
C119	1-163-091-00	s	CERAMIC,CHIP	8pF	0.25pF	50V
C120	1-163-091-00	s	CERAMIC,CHIP	8pF	0.25pF	50V
C121	1-165-319-11	s	CERAMIC.CHIP	0.1uF		50V
C122	1-117-681-11	s	ELECT,CHIP	100uF	20%	16V
C123	1-163-133-00	s	CERAMIC,CHIP	470pF	5%	50V
C124	1-163-021-91	s	CERAMIC,CHIP	0.01uF	10%	50V

(VSW-60(A) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C125	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C126	1-163-227-11	s	CERAMIC,CHIP 10pF 0.5pF 50V
C127	1-165-319-11	s	CERAMIC,CHIP 0.1uF 50V
C128	1-163-227-11	s	CERAMIC,CHIP 10pF 0.5pF 50V
C129	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
C130	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C201	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C202	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C203	1-163-243-11	s	CERAMIC,CHIP 47pF 5% 50V
C204	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C205	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C206	1-163-227-11	s	CERAMIC,CHIP 10pF 0.5pF 50V
C207	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C208	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
C209	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C210	1-165-319-11	s	CERAMIC,CHIP 0.1uF 50V
C211	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C212	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C301	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C302	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C303	1-126-204-11	s	ELECT,CHIP 47uF 20%
C304	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C305	1-163-235-11	s	CERAMIC,CHIP 22pF 5% 50V
			(FOR J, UC MODEL ONLY)
C306	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C401	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C402	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C403	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C404	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C405	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C406	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C407	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
C408	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C409	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C410	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C411	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C412	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
C414	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C415	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C416	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C417	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C418	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C419	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C421	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C422	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C423	1-126-603-11	s	ELECT,CHIP 4.7uF 20% 35V
C424	1-126-603-11	s	ELECT,CHIP 4.7uF 20% 35V
C425	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C426	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
C427	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C428	1-163-235-11	s	CERAMIC,CHIP 22pF 5% 50V
C429	1-163-235-11	s	CERAMIC,CHIP 22pF 5% 50V
C430	1-104-601-11	s	ELECT,CHIP 10uF 20% 10V
C431	1-126-395-11	s	ELECT,CHIP 22uF 20% 16V
C432	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C433	1-104-601-11	s	ELECT,CHIP 10uF 20% 10V
C434	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C435	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
C436	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V

(VSW-60(A) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C437	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C438	1-126-193-11	s	ELECT,CHIP 1uF 20% 50V
C439	1-126-193-11	s	ELECT,CHIP 1uF 20% 50V
C440	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C441	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
C442	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C443	1-104-601-11	s	ELECT,CHIP 10uF 20% 10V
C444	1-126-395-11	s	ELECT,CHIP 22uF 20% 16V
C445	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C446	1-104-601-11	s	ELECT,CHIP 10uF 20% 10V
C447	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C448	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
C449	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C450	1-126-395-11	s	ELECT,CHIP 22uF 20% 16V
C451	1-117-681-11	s	ELECT,CHIP 100uF 20% 16V
C464	1-124-779-00	s	ELECT,CHIP 10uF 20% 16V
C501	1-128-499-11	s	ELECT 220uF 20% 16V
C503	1-165-319-11	s	CERAMIC,CHIP 0.1uF 50V
C504	1-165-319-11	s	CERAMIC,CHIP 0.1uF 50V
C505	1-128-499-11	s	ELECT 220uF 20% 16V
C506	1-165-319-11	s	CERAMIC,CHIP 0.1uF 50V
C507	1-165-319-11	s	CERAMIC,CHIP 0.1uF 50V
C508	1-126-204-11	s	ELECT,CHIP 47uF 20% 16V
C601	1-163-133-00	s	CERAMIC,CHIP 470pF 5% 50V
C602	1-163-021-91	s	CERAMIC,CHIP 0.01uF 10% 50V
CN1	1-506-484-11	s	PIN,CONNECTOR 5P
CN2	1-506-485-11	s	PIN,CONNECTOR 6P
CN3	1-564-013-11	o	PIN,CONNECTOR 3P
CN11	1-770-065-11	s	JACK,PIN 3P
CN12	1-770-065-11	s	JACK,PIN 3P
C13	1-573-590-13	s	CONNECTOR,(S) TERMINAL 4P
C14	1-573-590-13	s	CONNECTOR,(S) TERMINAL 4P
C501	1-564-014-11	s	PIN,CONNECTOR 4P
C511	1-770-065-11	s	JACK,PIN 3P
C512	1-573-590-13	s	CONNECTOR,(S) TERMINAL 4P
CN513	1-770-080-12	s	CONNECTOR,ASSY(BNC) 1P
CT301	1-141-404-11	s	CAP,TRIMMER 30pF
D1	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D3	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D5	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D7	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D9	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D11	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D13	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D15	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D17	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D19	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D21	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D23	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D24	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D25	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D101	8-719-988-62	s	DIODE 1SS355
D503	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D505	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D507	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D509	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D511	8-719-064-61	s	DIODE 01BZA8.2(TE85L)

(VSW-60(A) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D513	8-719-064-61	s	DIODE 01BZA8.2(TE85L)
D515	8-719-988-62	s	DIODE 1SS355
D516	8-719-053-18	s	DIODE 1SR154-400TE-25
FL1	1-239-825-11	s	FILTER,CHIP EMI
FL2	1-239-825-11	s	FILTER,CHIP EMI
FL3	1-239-825-11	s	FILTER,CHIP EMI
FL4	1-239-825-11	s	FILTER,CHIP EMI
FL5	1-239-825-11	s	FILTER,CHIP EMI
FL6	1-239-825-11	s	FILTER,CHIP EMI
FL7	1-239-825-11	s	FILTER,CHIP EMI
FL8	1-239-825-11	s	FILTER,CHIP EMI
FL9	1-239-825-11	s	FILTER,CHIP EMI
FL10	1-239-825-11	s	FILTER,CHIP EMI
FL11	1-239-825-11	s	FILTER,CHIP EMI
FL12	1-239-825-11	s	FILTER,CHIP EMI
FL13	1-239-825-11	s	FILTER,CHIP EMI
FL502	1-239-825-11	s	FILTER,CHIP EMI
FL503	1-239-825-11	s	FILTER,CHIP EMI
FL504	1-239-825-11	s	FILTER,CHIP EMI
FL505	1-239-825-11	s	FILTER,CHIP EMI
FL506	1-239-825-11	s	FILTER,CHIP EMI
FL507	1-239-825-11	s	FILTER,CHIP EMI
IC1	8-759-009-06	s	IC MC14052BF
IC2	8-759-009-06	s	IC MC14052BF
IC3	8-759-443-11	s	IC NJM2283M-TE1
IC4	8-759-925-74	s	IC SN74HC04ANS
IC5	8-759-100-96	s	IC UPC4558G2
IC101	8-759-011-65	s	IC MC74HC4053F
IC102	8-759-147-47	s	IC UPC1093T
IC103	8-759-011-65	s	IC MC74HC4053F
IC104	8-759-987-27	s	IC LM1881M
IC105	8-759-239-58	s	IC TC74HC221AF
IC106	8-752-332-67	s	IC CXD1217M
IC107	8-759-262-03	s	IC MC14577CFEL
IC401	8-759-443-11	s	IC NJM2283M-TE1
IC402	8-759-353-00	s	IC NJM2534M(TE2)
IC403	8-759-353-00	s	IC NJM2534M(TE2)
IC404	8-759-177-02	s	IC NJM2267M(TE2)
IC405	8-759-440-06	s	IC NJM2509V(TE1)
IC407	8-759-177-02	s	IC NJM2267M(TE2)
IC408	8-759-177-02	s	IC NJM2267M(TE2)
IC501	8-759-701-75	s	IC NJM7805FA
IC601	8-759-925-72	s	IC SN74HC02ANS
L101	1-412-031-11	s	INDUCTOR,CHIP 47uH
L301	1-412-031-11	s	INDUCTOR,CHIP 47uH
L401	1-412-031-11	s	INDUCTOR,CHIP 47uH
L402	1-412-031-11	s	INDUCTOR,CHIP 47uH
Q1	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q2	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q3	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q101	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q102	8-729-140-63	s	TRANSISTOR 2SA1611T1-M5M6
Q103	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q104	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q105	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q106	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q107	8-729-117-32	s	TRANSISTOR 2SC4177-L6

(VSW-60(A) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q108	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q109	8-729-140-63	s	TRANSISTOR 2SA1611T1-M5M6
Q110	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q111	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q112	8-729-140-63	s	TRANSISTOR 2SA1611T1-M5M6
Q201	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q202	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q203	8-729-140-63	s	TRANSISTOR 2SA1611T1-M5M6
Q204	8-729-140-63	s	TRANSISTOR 2SA1611T1-M5M6
Q205	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q206	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q207	8-729-140-63	s	TRANSISTOR 2SA1611T1-M5M6
Q208	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q209	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q210	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q301	8-729-140-63	s	TRANSISTOR 2SA1611T1-M5M6
Q302	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q303	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q304	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q305	8-729-117-32	s	TRANSISTOR 2SC4177-L6
Q306	8-729-117-32	s	TRANSISTOR 2SC4177-L6
R6	1-216-105-91	s	RES,CHIP 220K 5% 1/10W
R7	1-216-105-91	s	RES,CHIP 220K 5% 1/10W
R8	1-216-105-91	s	RES,CHIP 220K 5% 1/10W
R9	1-216-105-91	s	RES,CHIP 220K 5% 1/10W
R10	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R11	1-216-089-91	s	RES,CHIP 47K 5% 1/10W
R12	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R13	1-216-022-00	s	RES,CHIP 75 5% 1/10W
R14	1-216-022-00	s	RES,CHIP 75 5% 1/10W
R15	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R16	1-216-089-91	s	RES,CHIP 47K 5% 1/10W
R17	1-216-022-00	s	RES,CHIP 75 5% 1/10W
R18	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R19	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R20	1-216-022-00	s	RES,CHIP 75 5% 1/10W
R21	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R22	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R23	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R24	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R25	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R26	1-216-022-00	s	RES,CHIP 75 5% 1/10W
R27	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R28	1-216-022-00	s	RES,CHIP 75 5% 1/10W
R29	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R30	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R31	1-216-022-00	s	RES,CHIP 75 5% 1/10W
R32	1-216-022-00	s	RES,CHIP 75 5% 1/10W
R33	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R34	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R35	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R36	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R37	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R38	1-216-025-91	s	RES,CHIP 100 55 1/10W
R39	1-216-025-91	s	RES,CHIP 100 55 1/10W
R40	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R41	1-216-073-00	s	RES,CHIP 10K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R42	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R43	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R44	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R45	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R46	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R47	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R48	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R49	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R50	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R51	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R52	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R53	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R54	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R55	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R56	1-216-089-91	s	RES,CHIP 47K 5% 1/10W
R57	1-216-089-91	s	RES,CHIP 47K 5% 1/10W
R58	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R59	1-216-097-91	s	RES,CHIP 100K 5% 1/10W
R101	1-216-065-91	s	RES,CHIP 4.7K 55 1/10W
R102	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R103	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R104	1-216-041-00	s	RES,CHIP 470 5% 1/10W
R105	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R106	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R107	1-216-033-00	s	RES,CHIP 220 5% 1/10W
R108	1-216-035-00	s	RES,CHIP 270 5% 1/10W
R109	1-216-061-00	s	RES,CHIP 3.3K 5% 1/10W
R110	1-216-061-00	s	RES,CHIP 3.3K 5% 1/10W
R111	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R112	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R113	1-216-061-00	s	RES,CHIP 3.3K 5% 1/10W
R114	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R115	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R116	1-216-051-00	s	RES,CHIP 1.2K 5% 1/10W
R117	1-216-041-00	s	RES,CHIP 470 5% 1/10W
R118	1-216-043-91	s	RES,CHIP 560 5% 1/10W
R119	1-216-077-00	s	RES,CHIP 15K 5% 1/10W
R120	1-216-045-00	s	RES,CHIP 680 5% 1/10W
R121	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R122	1-216-061-00	s	RES,CHIP 3.3K 5% 1/10W
R123	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R124	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R127	1-216-089-91	s	RES,CHIP 47K 5% 1/10W
R128	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R129	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R130	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R131	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R132	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R133	1-216-117-00	s	RES,CHIP 680K 5% 1/10W
R134	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R135	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R136	1-216-065-91	s	RES,CHIP 4.7K 5% 1/10W
R137	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R138	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R139	1-216-041-00	s	RES,CHIP 470 5% 1/10W
R140	1-216-001-00	s	RES,CHIP 10 5% 1/10W
R141	1-216-001-00	s	RES,CHIP 10 5% 1/10W
R142	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R143	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R144	1-216-295-91	s	SHORT 0

(VSW-60(A) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R145	1-216-295-91	s	SHORT 0 (FOR CED MODEL ONLY)
R201	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R202	1-216-083-00	s	RES,CHIP 27K 5% 1/10W
R203	1-216-045-00	s	RES,CHIP 680 5% 1/10W
R204	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R205	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R206	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R207	1-216-059-00	s	RES,CHIP 2.7K 5% 1/10W
R208	1-216-043-91	s	RES,CHIP 560 5% 1/10W
R209	1-216-043-91	s	RES,CHIP 560 5% 1/10W
R210	1-216-059-00	s	RES,CHIP 2.7K 5% 1/10W
R211	1-216-051-00	s	RES,CHIP 1.2K 5% 1/10W
R212	1-216-053-00	s	RES,CHIP 1.5K 5% 1/10W
R213	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R214	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R215	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R216	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R217	1-216-033-00	s	RES,CHIP 220 5% 1/10W
R218	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R219	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R220	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R221	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R222	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R223	1-216-057-00	s	RES,CHIP 2.2K 5% 1/10W
R224	1-216-033-00	s	RES,CHIP 220 5% 1/10W
R301	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R302	1-216-077-00	s	RES,CHIP 15K 5% 1/10W
R303	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R304	1-216-077-00	s	RES,CHIP 15K 5% 1/10W
R305	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R306	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R307	1-216-043-91	s	RES,CHIP 560 5% 1/10W
R308	1-216-041-00	s	RES,CHIP 470 5% 1/10W
R309	1-216-051-00	s	RES,CHIP 1.2K 5% 1/10W
R310	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R311	1-216-077-00	s	RES,CHIP 15K 5% 1/10W
R312	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R313	1-216-065-91	s	RES,CHIP 4.7K 5% 1/10W
R314	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R315	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R316	1-216-077-00	s	RES,CHIP 15K 5% 1/10W
R317	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R318	1-216-065-91	s	RES,CHIP 4.7K 5% 1/10W
R401	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R402	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R403	1-216-051-00	s	RES,CHIP 1.2K 5% 1/10W
R404	1-216-051-00	s	RES,CHIP 1.2K 5% 1/10W
R405	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R406	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R407	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R408	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R409	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R410	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R412	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R413	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R414	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R415	1-216-037-00	s	RES,CHIP 330 5% 1/10W (FOR J,UC MODEL ONLY)
	1-216-032-00	s	RES,CHIP 220 5% 1/10W (FOR CED MODEL ONLY)

(VSW-60(A) BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R416	1-216-049-91	s	RES,CHIP 1K 5% 1/10W
R417	1-216-041-00	s	RES,CHIP 470 5% 1/10W (FOR J,UC MODEL ONLY)
	1-216-037-00	s	RES,CHIP 330 5% 1/10W (FOR CED MODEL ONLY)
R419	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R420	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R421	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R422	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R423	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R424	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R425	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R426	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R427	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R428	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R429	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R430	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R435	1-216-295-91	s	RES,CHIP 0
R436	1-216-121-91	s	RES,CHIP 1M 5% 1/10W
R502	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R503	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R504	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R505	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R507	1-216-029-00	s	RES,CHIP 150 5% 1/10W
R508	1-216-029-00	s	RES,CHIP 150 5% 1/10W
R509	1-216-029-00	s	RES,CHIP 150 5% 1/10W
R510	1-216-029-00	s	RES,CHIP 150 5% 1/10W
R511	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R512	1-216-073-00	s	RES,CHIP 10K 5% 1/10W
R513	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R514	1-216-025-91	s	RES,CHIP 100 5% 1/10W
R516	1-216-029-00	s	RES,CHIP 150 5% 1/10W
R517	1-216-029-00	s	RES,CHIP 150 5% 1/10W
R518	1-216-029-00	s	RES,CHIP 150 5% 1/10W
R519	1-216-029-00	s	RES,CHIP 150 5% 1/10W
R601	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
R602	1-216-306-11	s	RES,CHIP 3.9 5% 1/10W
RV201	1-241-761-11	s	RES,ADJ,CARBON 1K
RV301	1-241-761-11	s	RES,ADJ,CARBON 1K
X101	1-567-866-11	s	VIBRATOR,CRYSTAL 14.31818MHz (FOR J,UC MODEL ONLY)
	1-579-519-21	s	VIBRATOR,CRYSTAL 14.18750MHz (FOR CED MODEL ONLY)

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
CN1	⚠1-580-375-11	s	INLET 3P
CN2	⚠1-526-920-12	s	AC OUTLET(WITH EARTH) (FOR J,UC MODEL ONLY)
F1	⚠1-532-744-11	s	FUSE,GLASS TUBE (FOR J,UC MODEL ONLY)
	⚠1-532-286-00	s	FUSE,TIME-LAG (FOR CED MODEL ONLY)
S100	⚠1-570-117-51	s	SWITCH,POWER
2pcs	1-251-253-11	s	SOCKET
1pc	1-418-048-11	s	UNIT,BACK LIGHT
1pc	⚠1-468-346-11	s	REGULATOR,SWITCHING
1pc	1-500-051-11	s	BEAD,FERRITE(WITH CASE) (FOR J,UC MODEL ONLY)
1pc	1-500-422-11	s	BEAD,FERRITE (FOR CED MODEL ONLY)
2pcs	1-517-371-11	s	FLUORESCENT LAMP(9W)
1pc	1-543-933-11	s	CORE,FERRITE (FOR CED MODEL ONLY)
1pc	1-769-207-11	o	WIRE,FLAT TYPE(FFC CONNECTOR)
1pc	1-959-058-11	o	HARNESS,SUB(SY-EVI) (FOR J,UC MODEL ONLY)
1pc	1-959-060-11	o	HARNESS,SUB(VSW-EVI) (FOR J,UC MODEL ONLY)
1pc	1-959-061-11	o	HARNESS,SUB(MA-VSW)
1pc	1-959-062-11	o	HARNESS,SUB(PS-VSW)
2pcs	1-959-063-11	o	HARNESS,SUB(SY-PS/VSW)
2pcs	1-959-064-11	o	HARNESS,SUB(PS-ARM)
1pc	1-959-335-11	s	HARNESS,SUB(EVI MULTI) (FOR CED MODEL ONLY)

(HARNESS)

HARNESS,SUB(AC SWITCH)
CN3/PS-526 Board to CN1/SWG

1pc	1-537-568-11	o	TERMINAL,GROUND
5pcs	1-562-210-11	o	CONTACT,CONNECTOR AWG18-22
1pc	1-562-211-11	o	HOUSING,CONNECTOR 3P
1pc	1-562-286-11	o	HOUSING,CONNECTOR 5P
1pc	⚠1-570-117-51	s	SWITCH,POWER

HARNESS,SUB(GND)
CN3/KSW-40 Board to GND

1pc	1-535-580-11	o	TERMINAL,SOLDERLESS AWG22-26
1pc	1-569-191-11	o	TERMINAL,SOLDERLESS AWG22-26
1pc	1-569-195-11	o	HOUSING,CONNECTOR 2P

HARNESS,SUB(SWG-PS)
CN2/SWG to CN1/PS-517 Board

2pcs	1-562-285-11	o	HOUSING,CONNECTOR 4P
8pcs	1-562-210-11	o	CONTACT,CONNECTOR AWG22-30

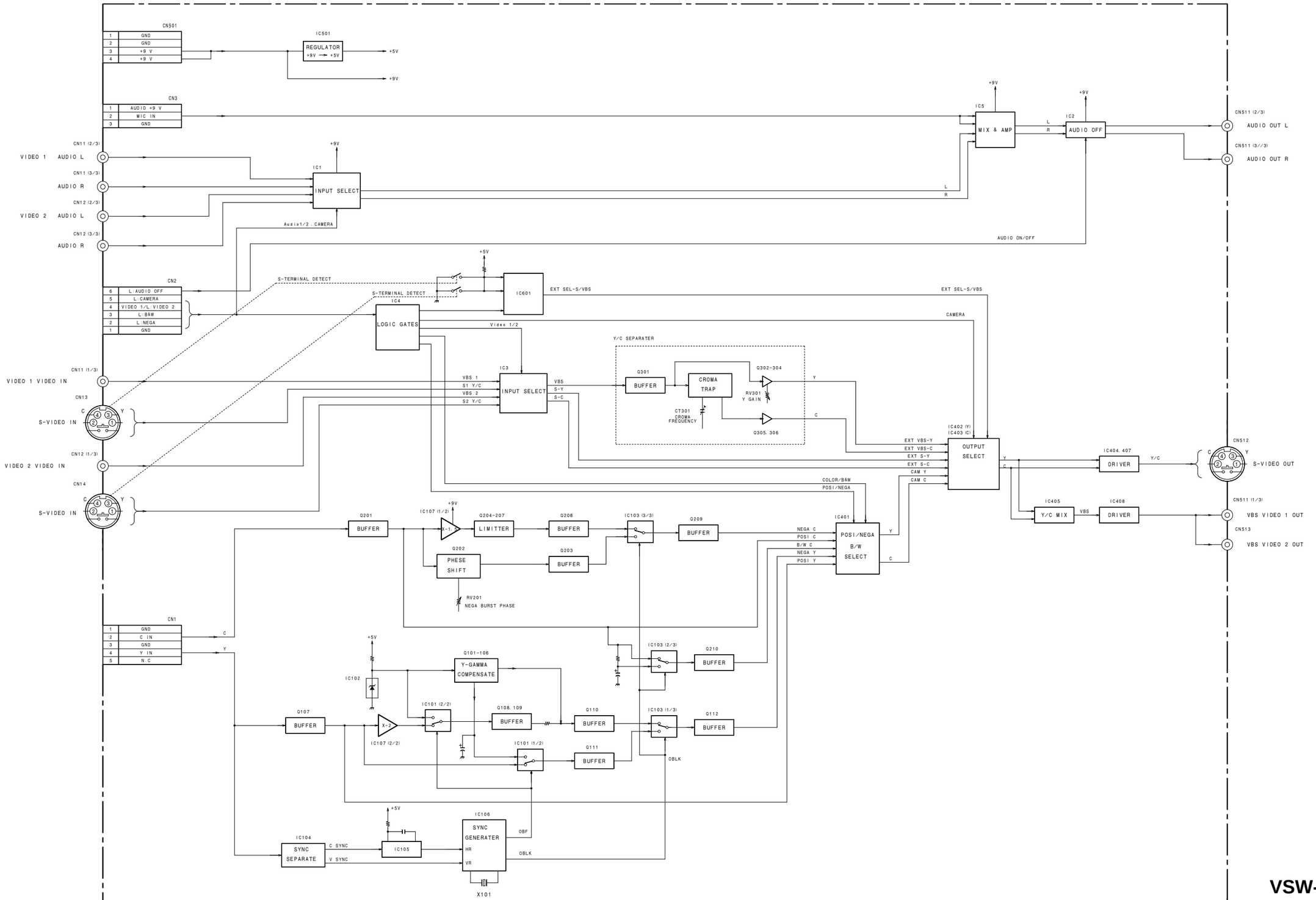
HARNESS,SUB(PS-INV)
CN3/PS-517 Board to BACK LIGHT UNIT

1pc	1-562-506-11	o	CONNECTOR,MICRO(HOUSING) 4P
2pcs	1-562-505-11	o	CONNECTOR,MICRO(HOUSING) 3P
8pcs	1-562-490-11	o	CONTACT,MICRO(SMALL TYPE) AWG22-30

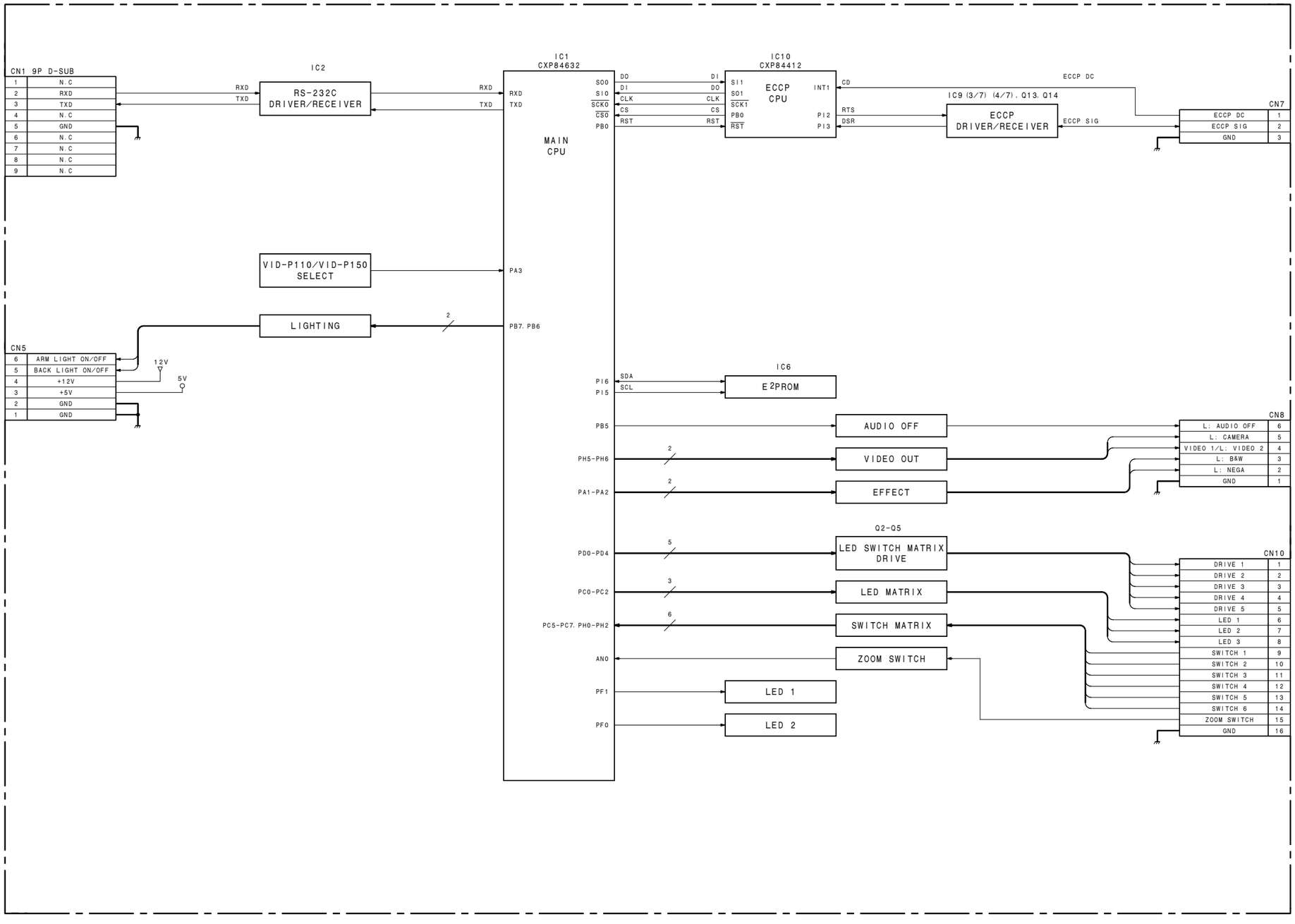
HARNESS,SUB(PS-EVI)(J,UC MODEL ONLY)
CN2/PS-517 Board to CN301/EVI

1pc	1-569-195-11	o	HOUSING,CONNECTOR 2P
1pc	1-569-617-11	o	HOUSING,CONNECTOR 2P
2pcs	1-766-387-11	o	TERMINAL,SOLDERLESS AWG26-28
2pcs	1-569-193-11	o	TERMINAL,SOLDERLESS AWG24-30

SECTION 6
BLOCK DIAGRAMS

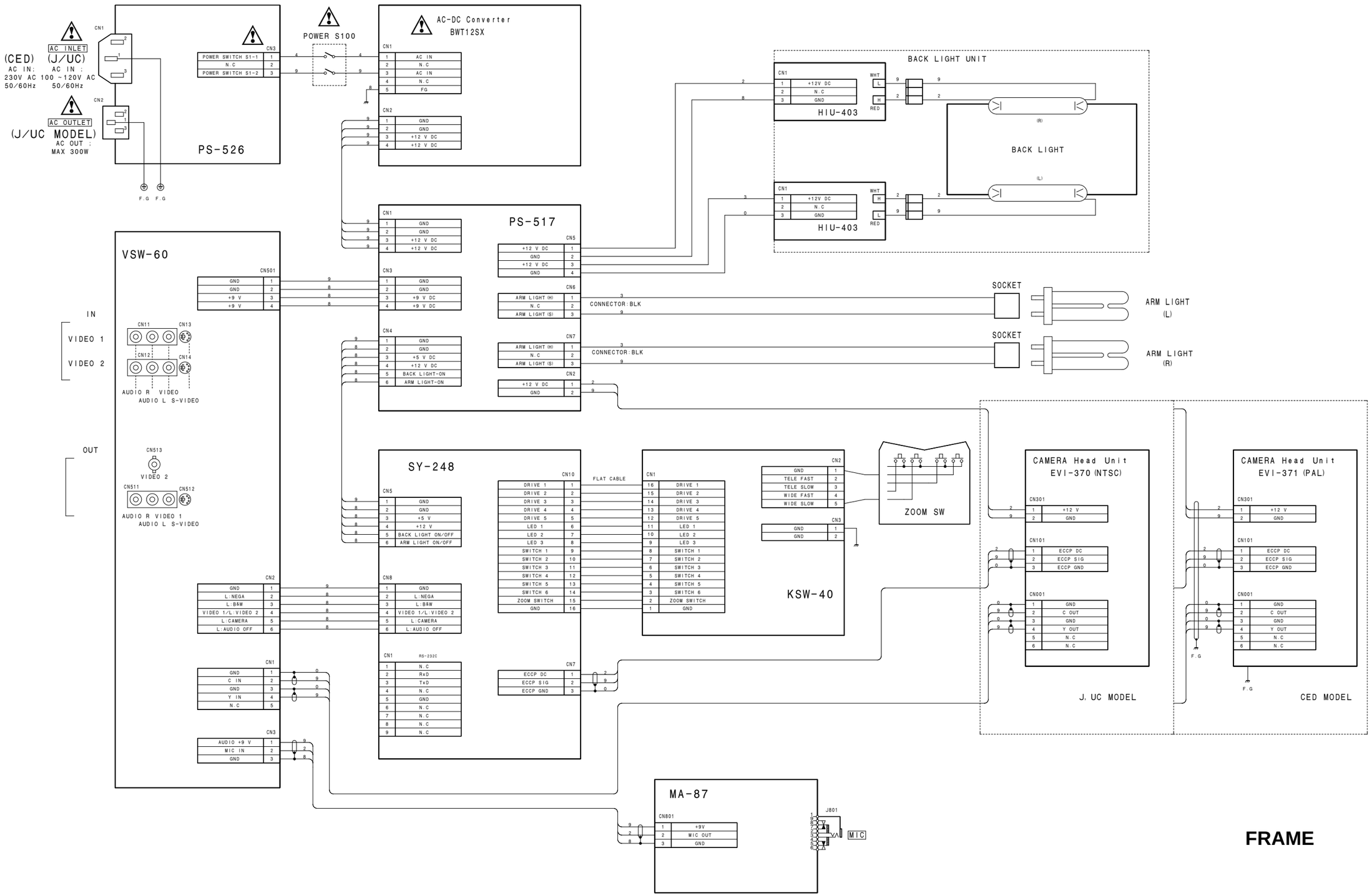


VSW-60

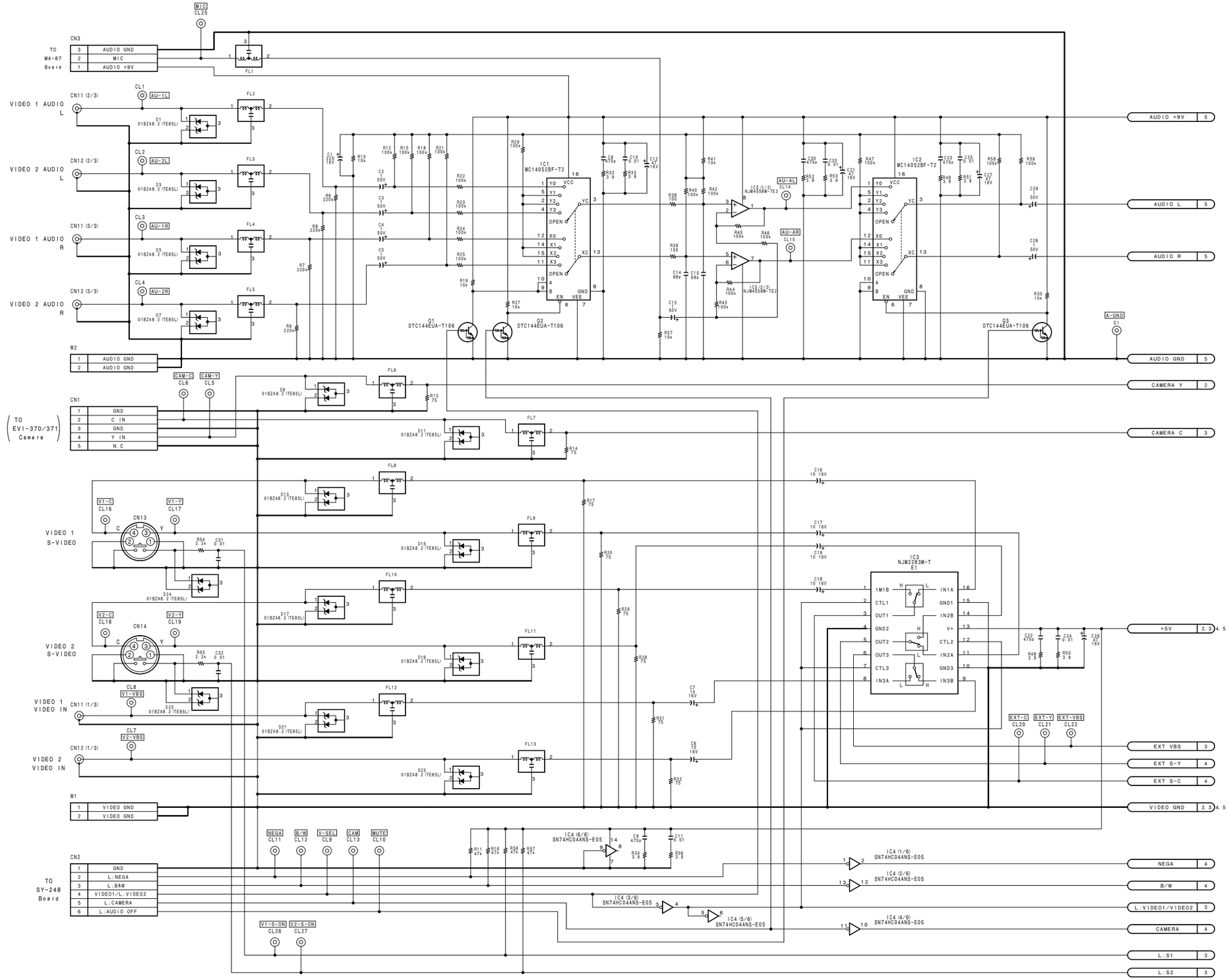

CN1 9P D-SUB
1 N.C
2 RXD
3 TXD
4 N.C
5 GND
6 N.C
7 N.C
8 N.C
9 N.C
IC2
RS-232C DRIVER/RECEIVER
RXD
TXD
IC1 CXP84632
MAIN CPU
SOO DO
SIO DI
SCKO CLK
CSO CS
PBO RST
IC10 CXP84412
ECCP CPU
SI1 DI
SO1 DO
SCK1 CLK
PBO CS
RST RST
INT1 CD
PI2 RTS
PI3 DSR
ECCP DC
IC9 (3/7) (4/7), Q13, Q14
ECCP DRIVER/RECEIVER
ECCP SIG
CN7
ECCP DC 1
ECCP SIG 2
GND 3
VID-P110/VID-P150 SELECT
PA3
LIGHTING
2
PB7, PB6
CN5
6 ARM LIGHT ON/OFF
5 BACK LIGHT ON/OFF
4 +12V
3 +5V
2 GND
1 GND
12V
5V
PI6 SDA
PI5 SCL
IC6
E2PROM
PB5
AUDIO OFF
PH5-PH6
2
VIDEO OUT
PA1-PA2
2
EFFECT
CN8
L: AUDIO OFF 6
L: CAMERA 5
VIDEO 1/L: VIDEO 2 4
L: B&W 3
L: NEGA 2
GND 1
Q2-Q5
PD0-PD4
5
LED SWITCH MATRIX DRIVE
PC0-PC2
3
LED MATRIX
PC5-PC7, PH0-PH2
6
SWITCH MATRIX
AN0
ZOOM SWITCH
PF1
LED 1
PF0
LED 2
CN10
DRIVE 1 1
DRIVE 2 2
DRIVE 3 3
DRIVE 4 4
DRIVE 5 5
LED 1 6
LED 2 7
LED 3 8
SWITCH 1 9
SWITCH 2 10
SWITCH 3 11
SWITCH 4 12
SWITCH 5 13
SWITCH 6 14
ZOOM SWITCH 15
GND 16

SY-248

SECTION 7
SCHEMATIC DIAGRAMS & BOARD LAYOUTS

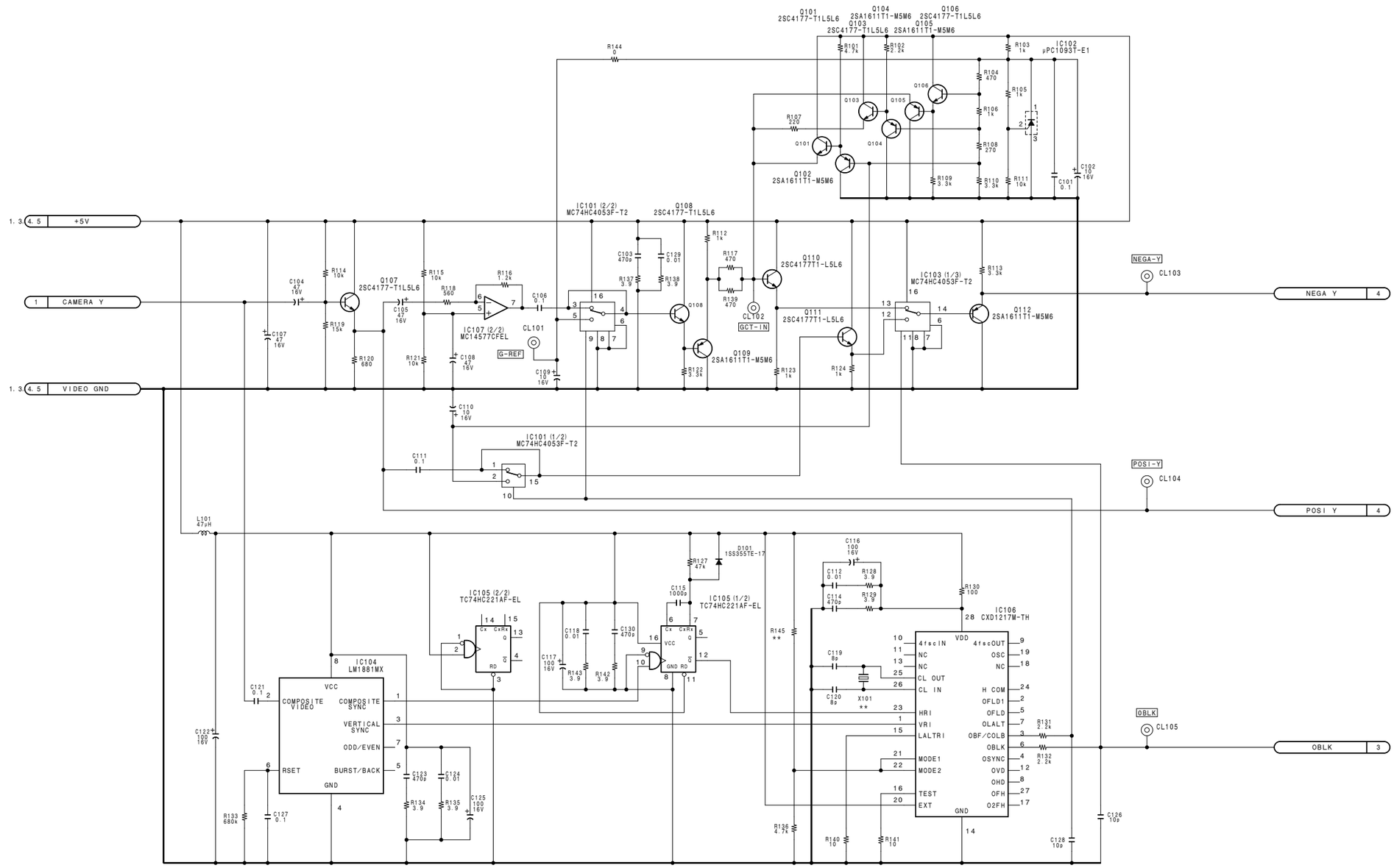


VSW-60 (1/5) : VIDEO / AUDIO



VSW-60 (1/5)

VSW-60 (2/5) : VIDEO / AUDIO

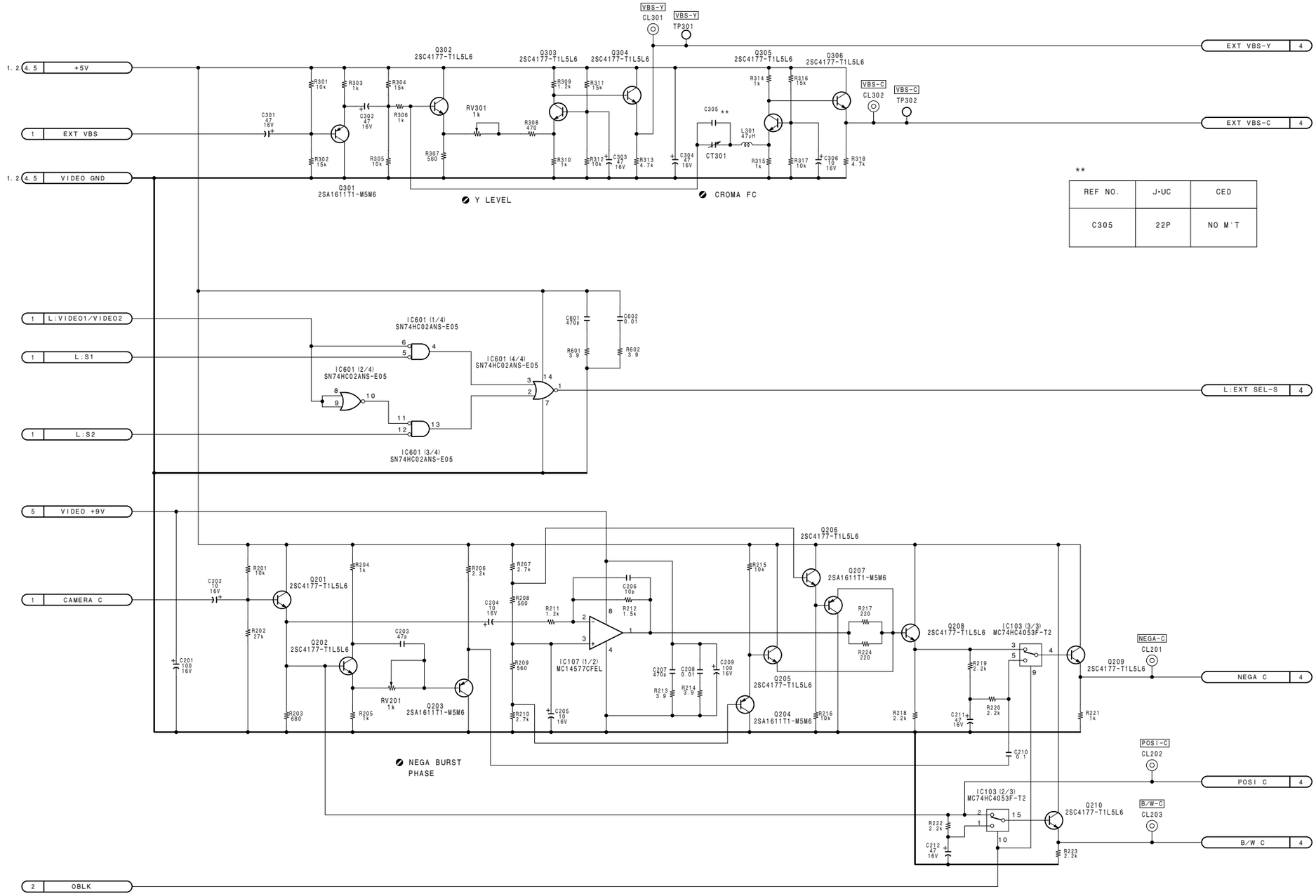


**

REF NO.	J•UC	CED
R145	NO M'T	M'T 0Ω
X101	14.318 MHz	14.1875 MHz

VSW-60 (2/5)

VSW-60 (3/5) : VIDEO / AUDIO

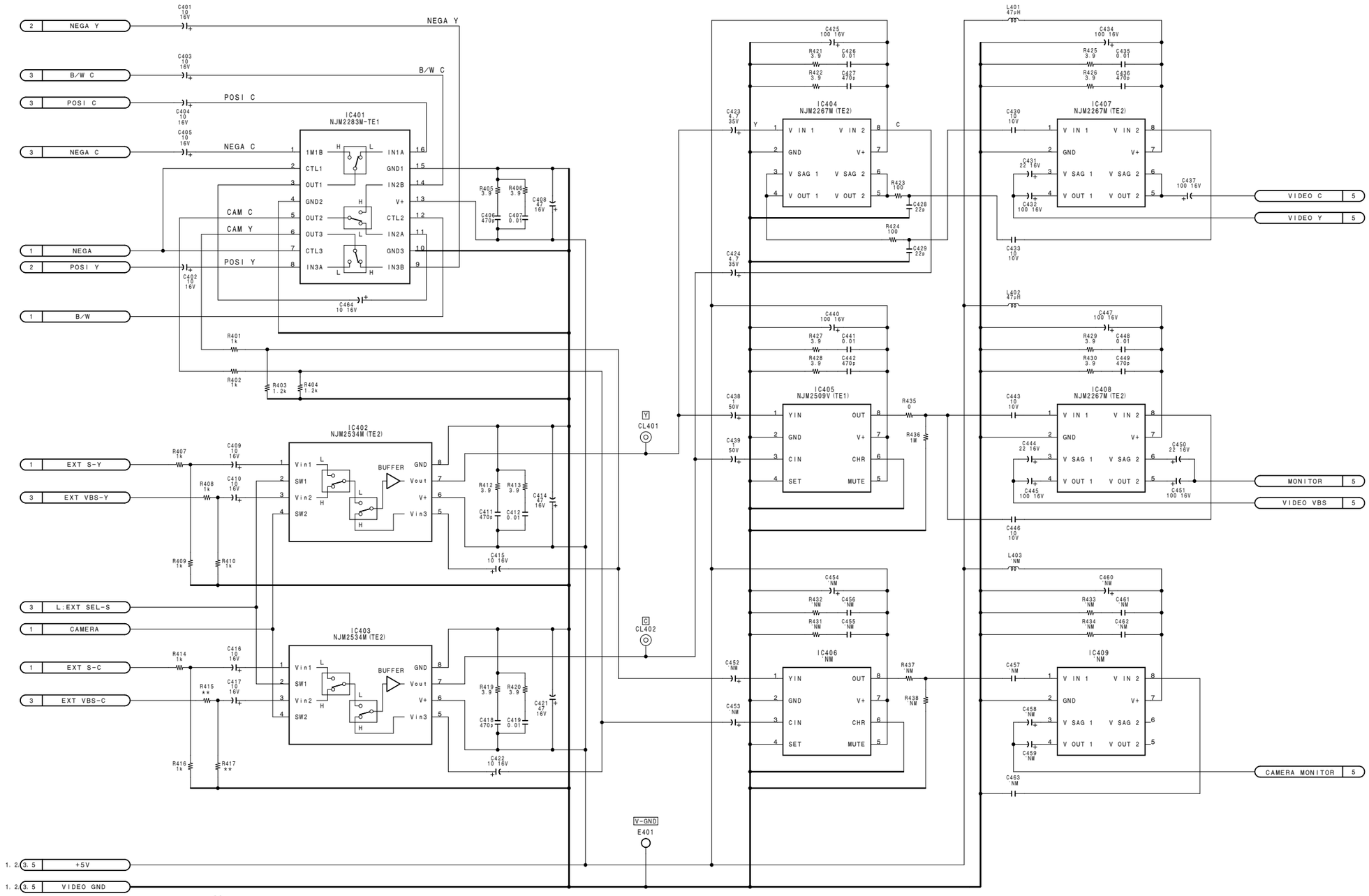


**

REF NO.	J•UC	CED
C305	22P	NO M'T

VSW-60 (3/5)

VSW-60 (4/5) : VIDEO / AUDIO



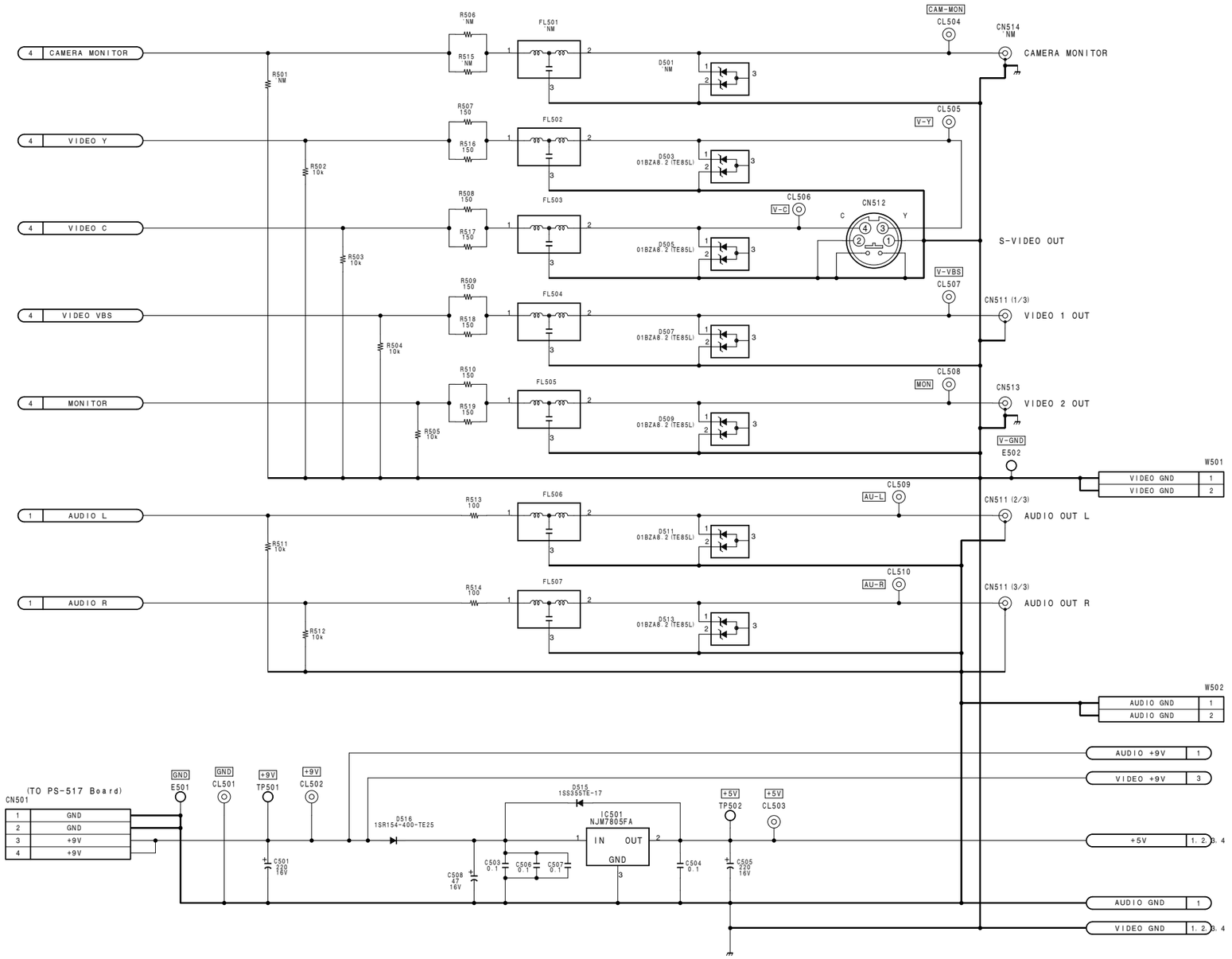
**

REF NO.	J-UC	CED
R415	330Ω	220Ω
R417	470Ω	330Ω

NOTE)'NM:NO MOUNT

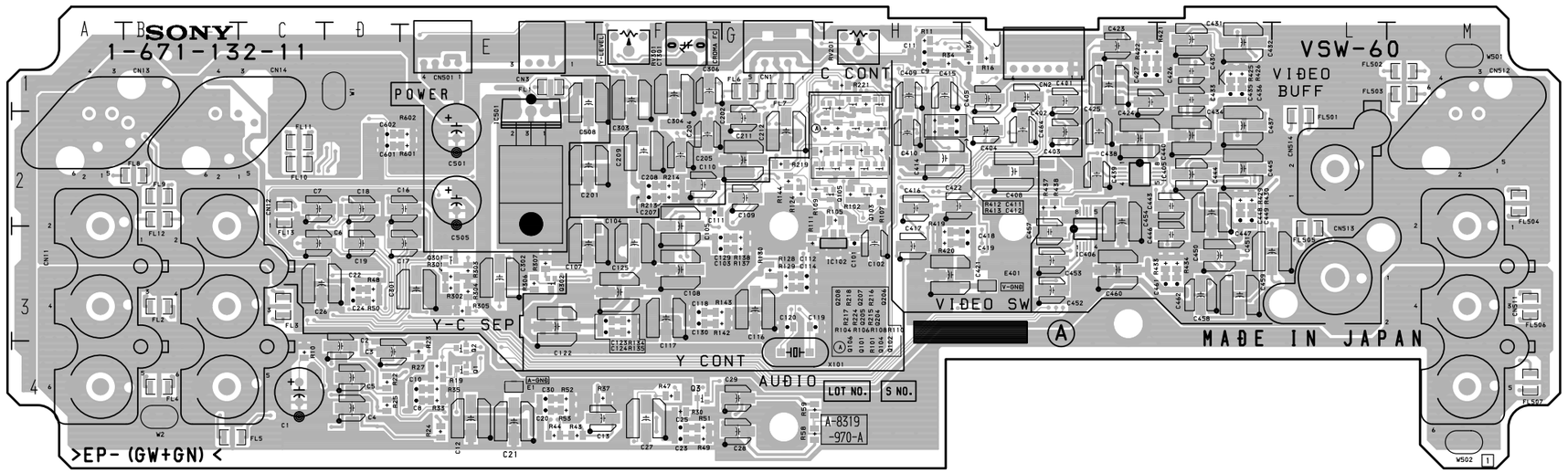
VSW-60 (4/5)

VSW-60 (5/5) : VIDEO / AUDIO

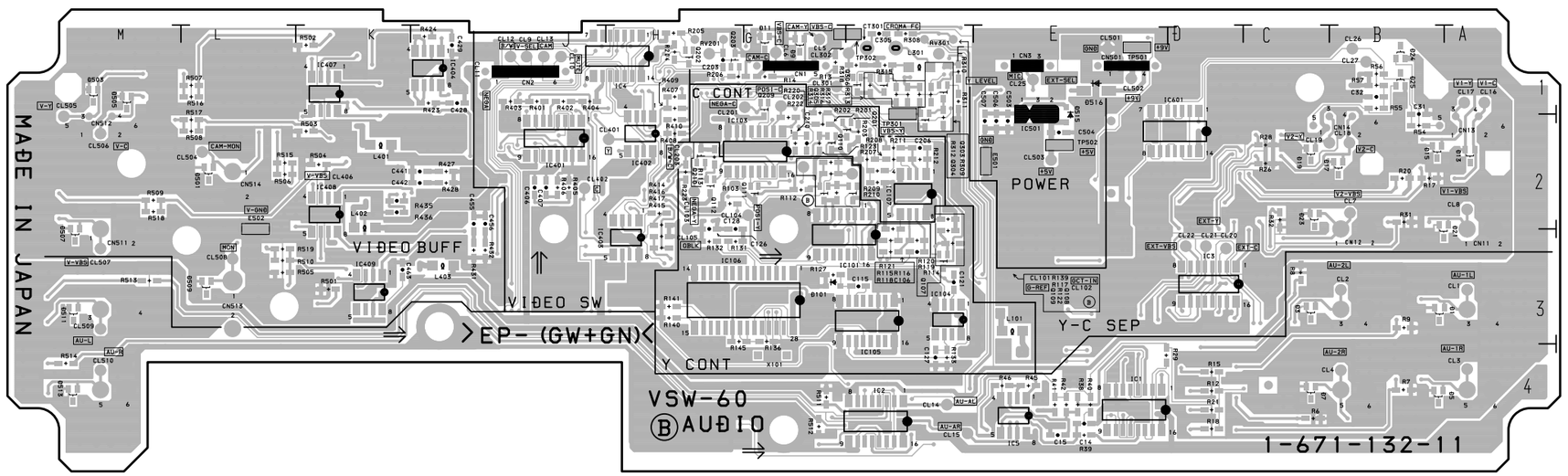


NOTE)
'NM:NO MOUNT

VSW-60 (5/5)



VSW-60 - A SIDE -
SUFFIX : -11

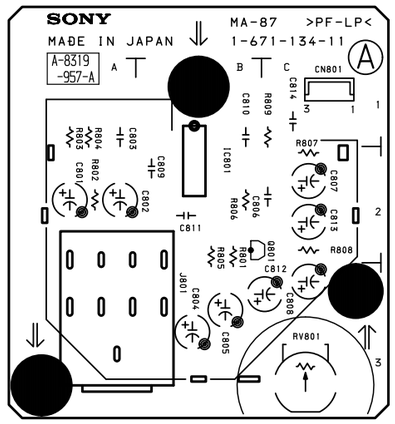


VSW-60 - B SIDE -
SUFFIX : -11

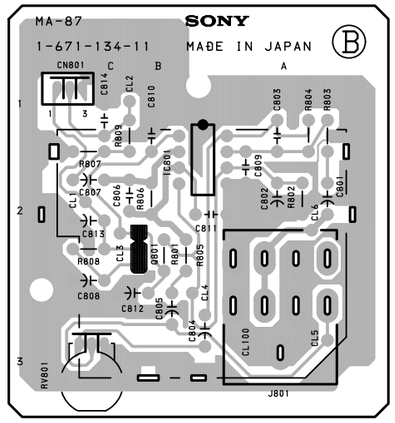
*: B SIDE

CN1	G1	IC1	*E4
CN2	J1	IC2	*F4
CN3	E1	IC3	*D3
CN11	A3	IC4	*H1
CN12	B3	IC5	*E4
CN13	A2	IC101	*F3
CN14	B2	IC102	H3
CN501	E1	IC103	*G2
CN511	M3	IC104	*F3
CN512	M2	IC105	*F3
CN513	L3	IC106	*G3
		IC107	*F2
CT301	F1	IC401	*J2
		IC402	*H2
D1	*B3	IC403	*H3
D3	*C3	IC404	*J1
D5	*B4	IC405	J2
D7	*C4	IC406	J3
D9	*G1	IC407	*K1
D11	*G1	IC408	*K2
D13	*A2	IC409	*K3
D15	*B2	IC501	E2
D17	*B2	IC601	*D2
D19	*C2		
D21	*A3	Q1	E4
D23	*C2	Q2	E4
D24	*B1	Q3	F4
D25	*B1	Q101	H2
D101	*G3	Q102	H2
D501	*L2	Q103	H2
D503	*M1	Q104	H2
D505	*M1	Q105	H2
D507	*M3	Q106	H2
D509	*L3	Q107	*F3
D511	*M3	Q108	*F2
D513	*M4	Q109	*G2
D515	*E1	Q110	*G2
D516	*E1	Q111	*G2
		Q112	*H2
E1	E4	Q201	*F2
E401	J3	Q202	*H1
E501	*E2	Q203	*H1
E502	*L2	Q204	H2
		Q205	H2
FL1	E1	Q206	H1
FL2	B3	Q207	H1
FL3	C3	Q208	H1
FL4	B4	Q209	*G1
FL5	B4	Q210	*H2
FL6	G1	Q301	E3
FL7	G1	Q302	E3
FL8	B2	Q303	*F1
FL9	B2	Q304	*F2
FL10	C2	Q305	*F1
FL11	C2	Q306	*F1
FL12	B2		
FL13	C2	RV201	H1
FL501	L2	RV301	F1
FL502	M1		
FL503	M1	TP301	*F2
FL504	M2	TP302	*F1
FL505	L3	TP501	*E1
FL506	M3	TP502	*E2
FL507	M4		
		X101	G3

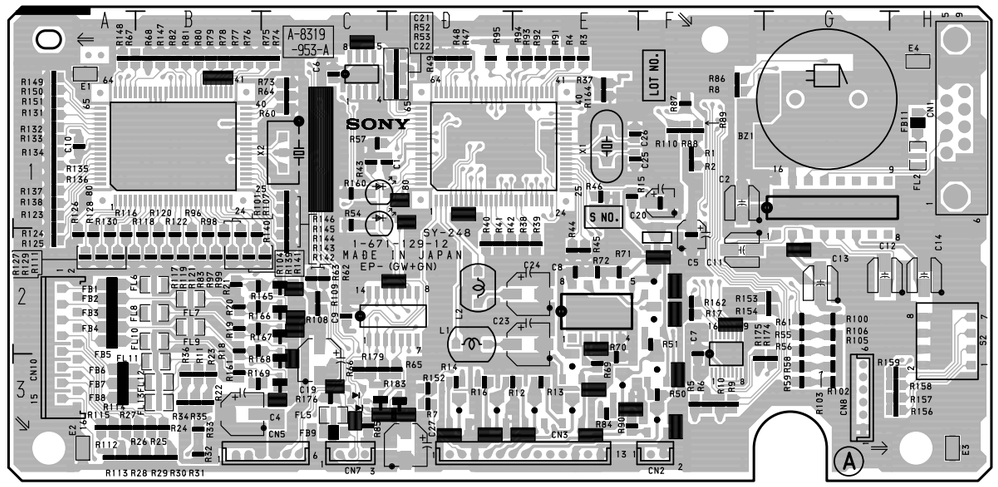
MA-87 : MIC AMP



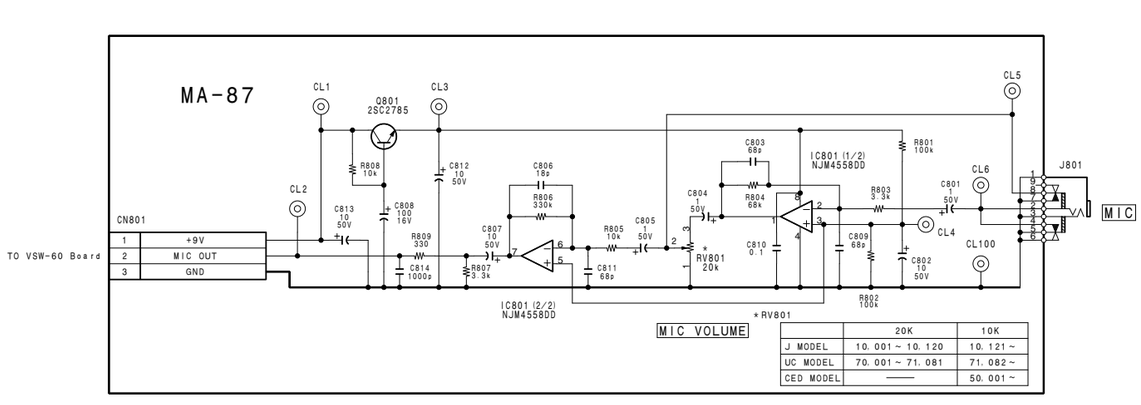
MA-87 - A SIDE -
SUFFIX : -11



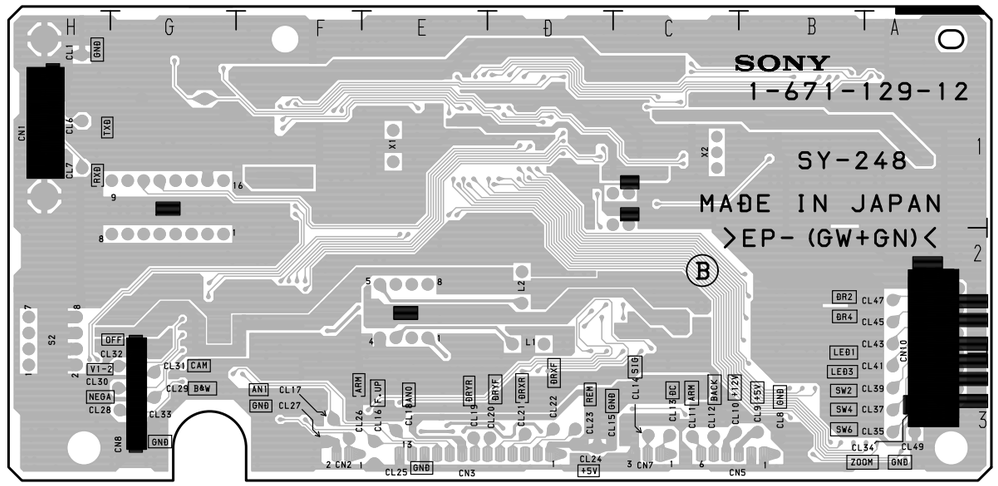
MA-87 - B SIDE -
SUFFIX : -11



SY-248 - A SIDE -
SUFFIX : -12



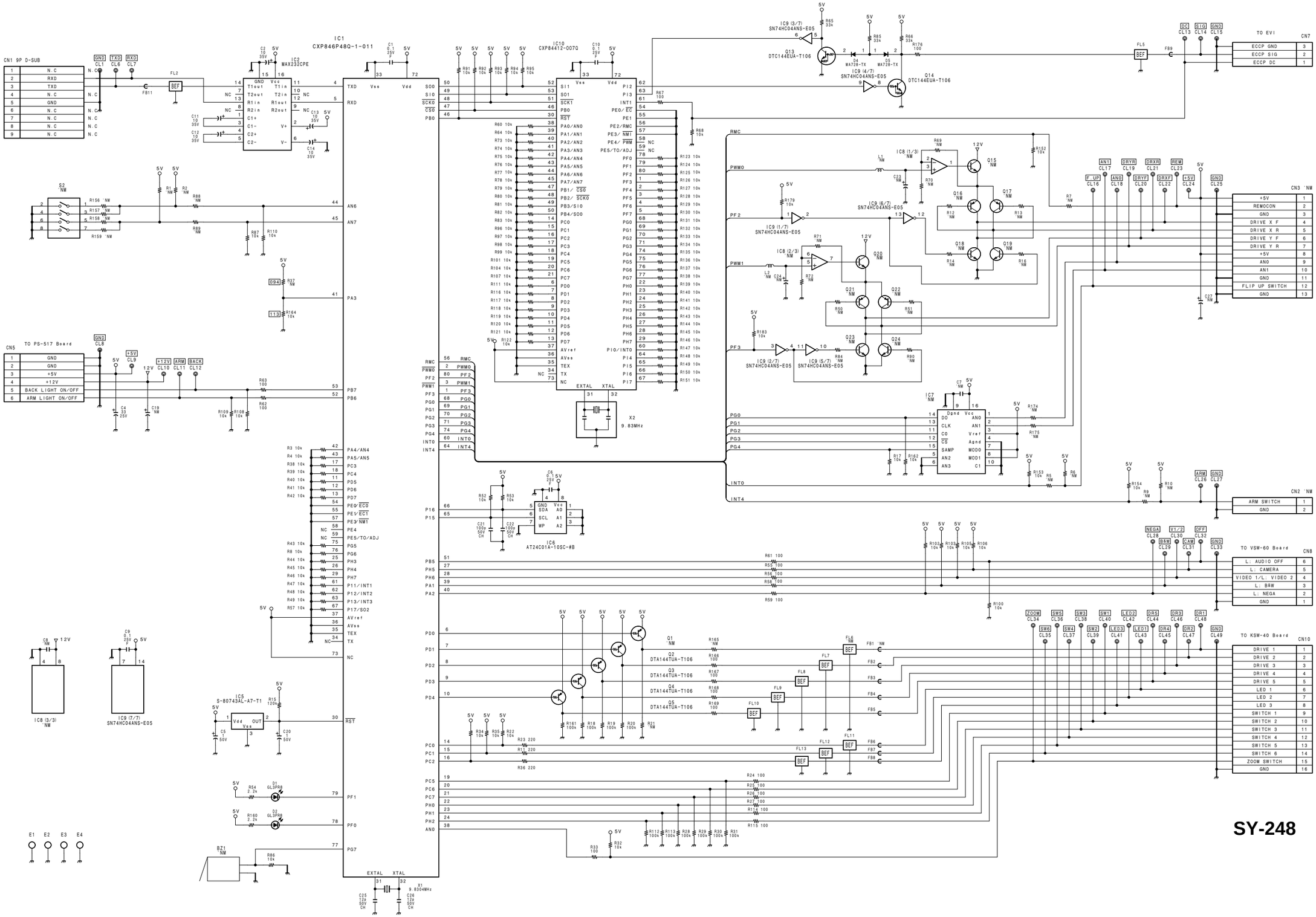
MA-87



SY-248 - B SIDE -
SUFFIX : -12

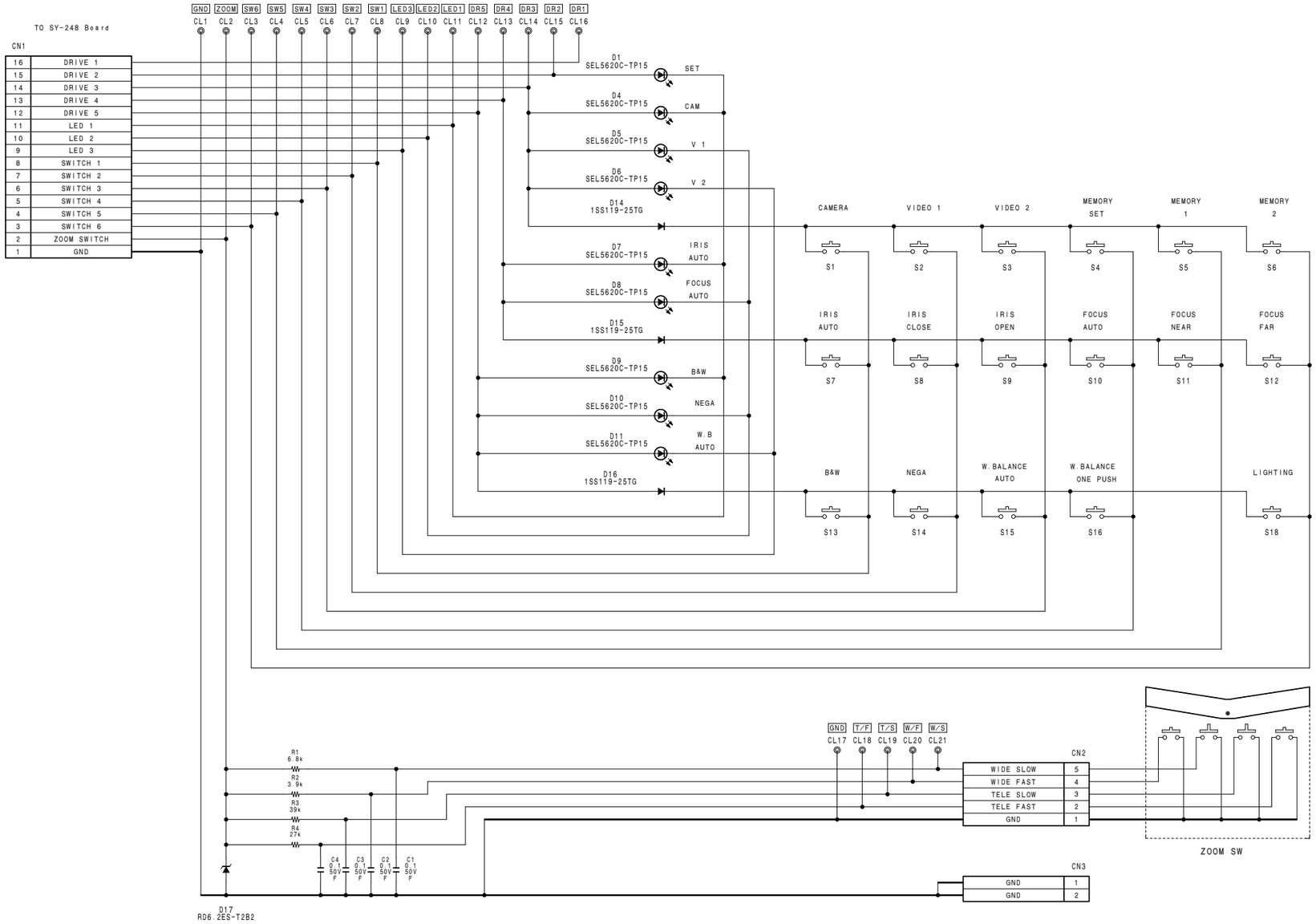
BZ1	G1	FB1	A2	IC1	D1	S2	H2
		FB2	A2	IC2	G1		
CN1	H1	FB3	A2	IC5	F2	X1	E1
CN2	F3	FB4	A2	IC6	C1	X2	C1
CN3	E3	FB5	A2	IC7	F2		
CN5	C3	FB6	A3	IC8	E2		
CN7	C3	FB7	A3	IC9	D2		
CN8	G3	FB8	A3	IC10	B1		
CN10	A3	FB9	C3				
		FB11	H1	Q1	C2		
D1	C1			Q2	C2		
D2	C1	FL2	H1	Q3	C2		
D4	C3	FL5	C3	Q4	C3		
D5	C3	FL6	B2	Q5	C3		
		FL7	B2	Q13	C3		
E1	A1	FL8	B2	Q14	D3		
E2	A3	FL9	B2				
E3	H3	FL10	B2				
E4	H1	FL11	B3				
		FL12	B3				
		FL13	B3				

SY-248 : SYSCON

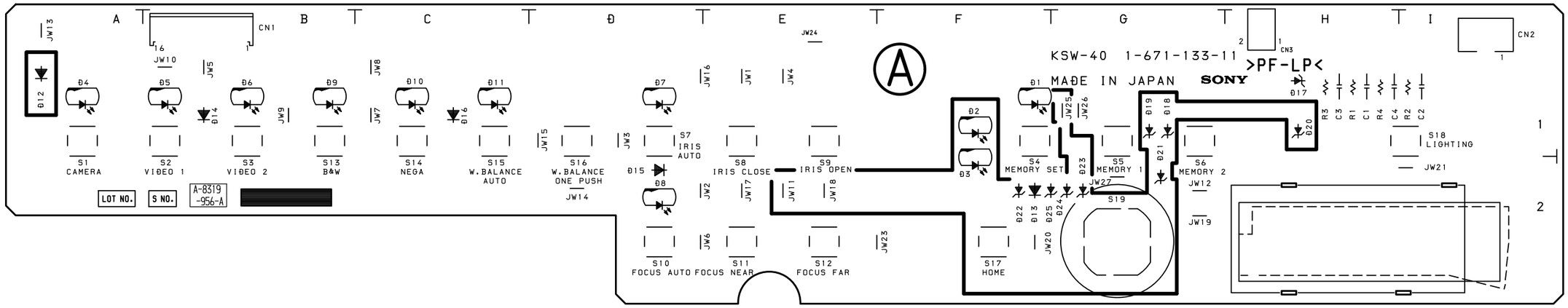


VID-P110

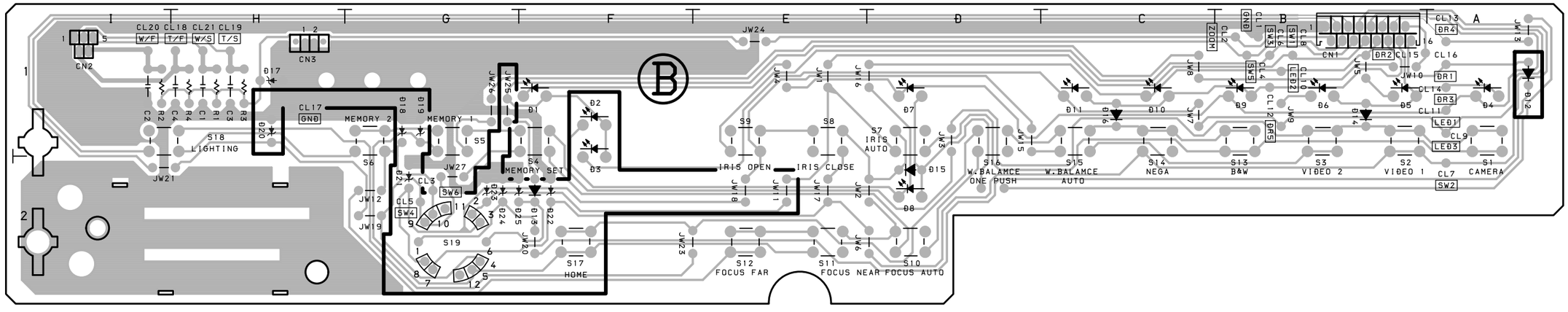
KSW-40 : KEY SWITCH



KSW-40



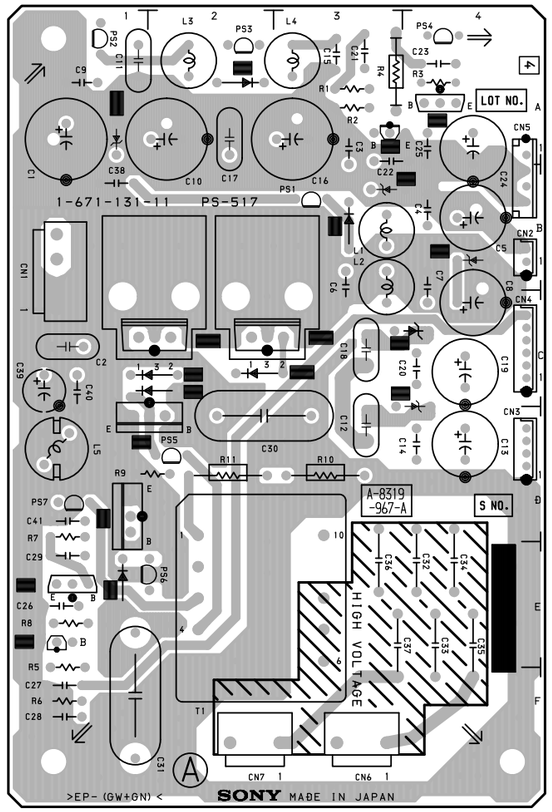
KSW-40 - A SIDE -
SUFFIX : -11



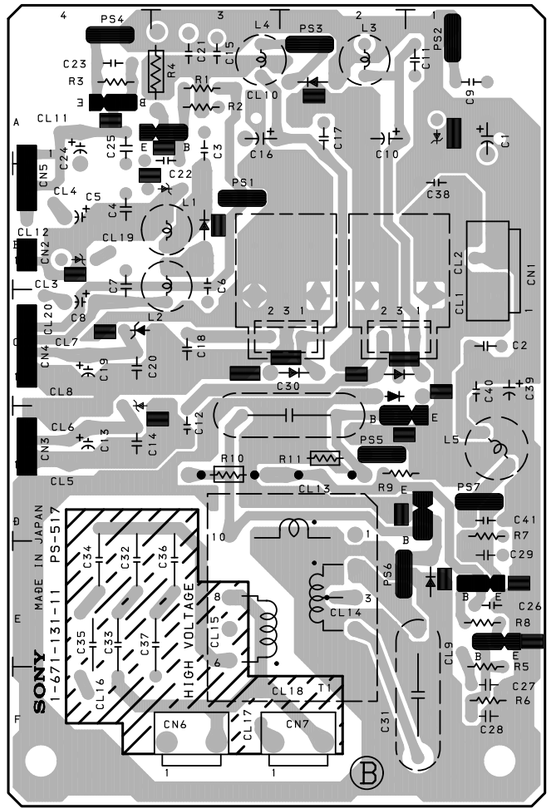
KSW-40 - B SIDE -
SUFFIX : -11

CN1	B1
CN2	I1
CN3	H1
D1	F1
D2	F1
D3	F1
D4	A1
D5	B1
D6	B1
D7	D1
D8	D2
D9	B1
D10	C1
D11	C1
D12	A1
D13	F2
D14	B1
D15	D2
D16	C1
D17	H1
D18	G1
D19	G1
D20	H1
D21	G2
D22	F2
D23	G2
D24	G2
D25	G2
S1	A1
S2	B1
S3	B1
S4	F1
S5	G1
S6	G1
S7	D1
S8	E1
S9	E1
S10	D2
S11	E2
S12	E2
S13	B1
S14	C1
S15	C1
S16	D1
S17	F2
S18	I1
S19	G2

CN1	B1
CN2	B4
CN3	D4
CN4	C4
CN5	B1
CN6	F3
CN7	F2
D1	A2
D2	C2
D3	C4
D4	C4
D5	C2
D6	E1
D7	B3
D8	B3
D9	B4
D10	C2
D11	A1
IC1	C2
IC2	C2
PS1	B3
PS2	A1
PS3	A2
PS4	A4
PS5	D2
PS6	E2
PS7	D1
Q1	A4
Q2	A3
Q3	E1
Q4	E1
Q5	D1
Q6	D1
T1	E2

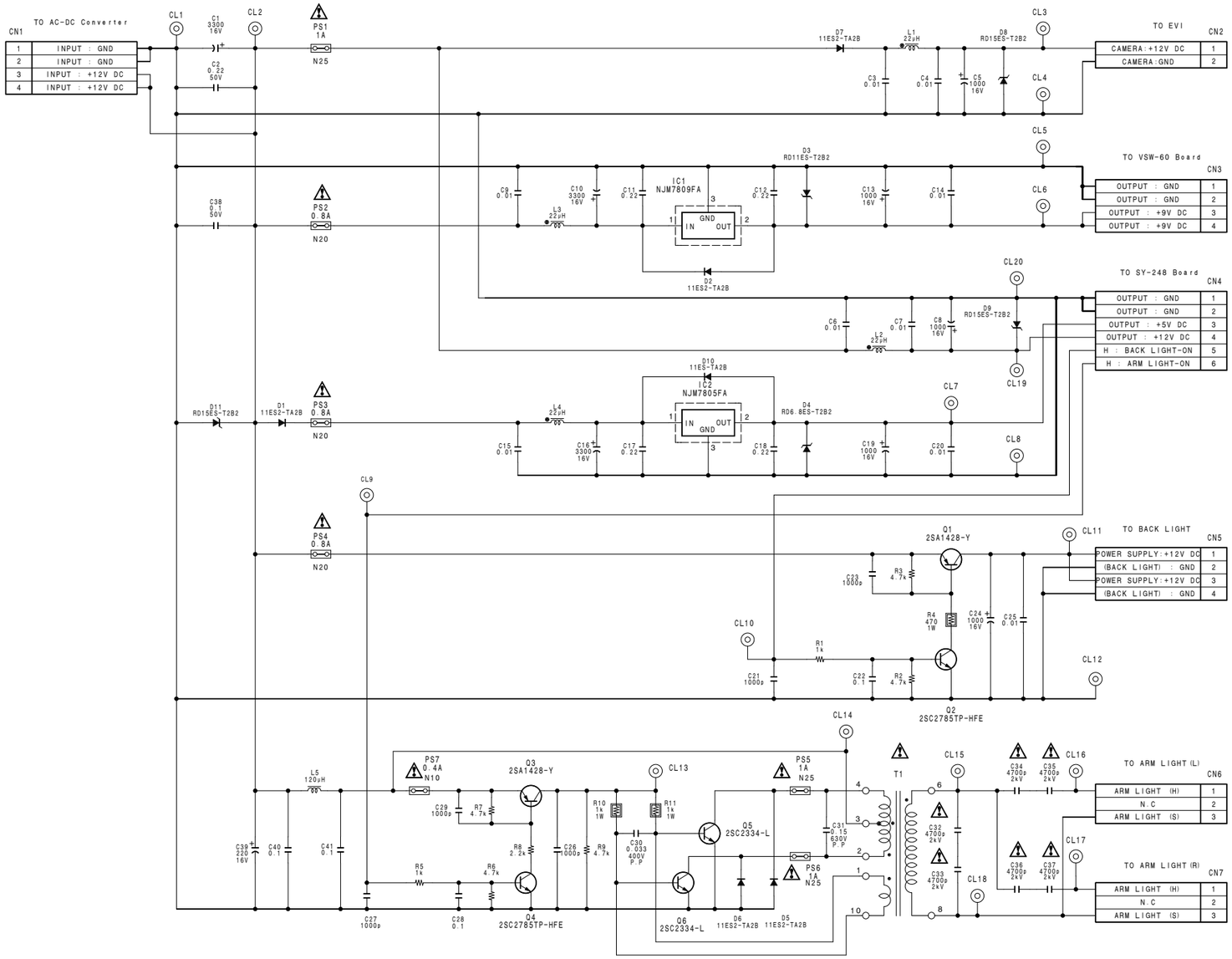


PS-517 - A SIDE -
SUFFIX : -11



PS-517 - B SIDE -
SUFFIX : -11

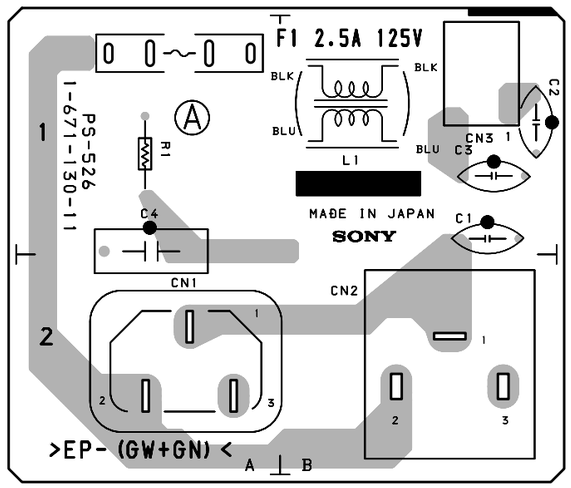
PS-517 : POWER SUPPLY



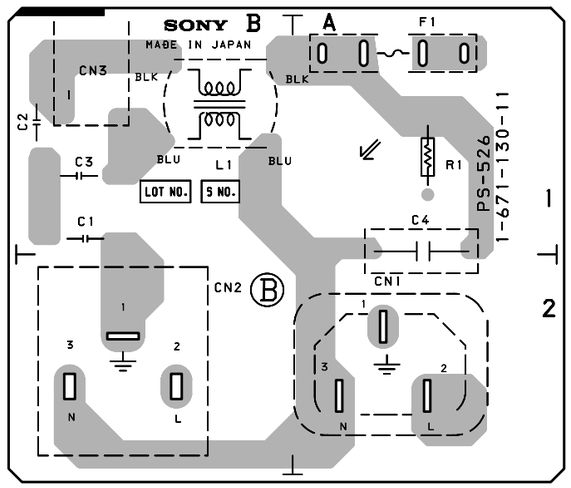
PS-517

PS-526 : POWER INPUT/OUTPUT, FILTER

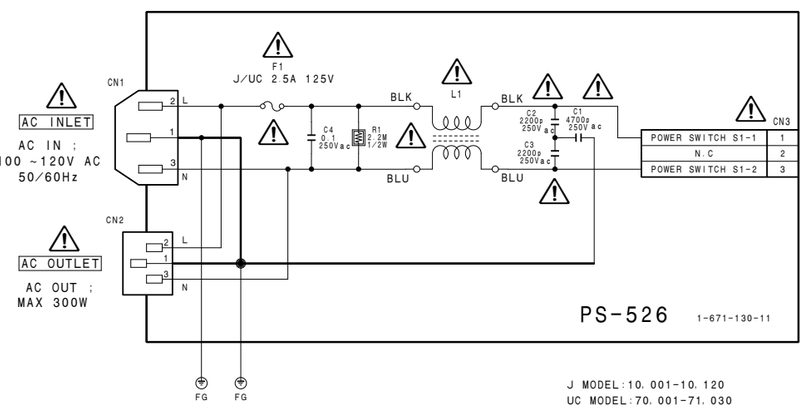
J MODEL : 10,001-10,120
UC MODEL : 70,001-71,030



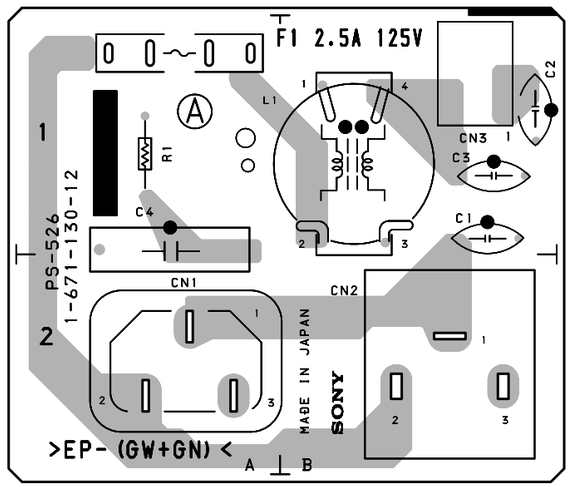
PS-526 - A SIDE -
SUFFIX : -11



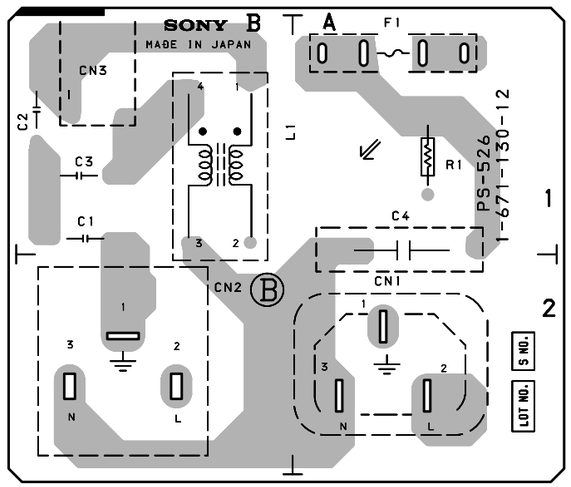
PS-526 - B SIDE -
SUFFIX : -11



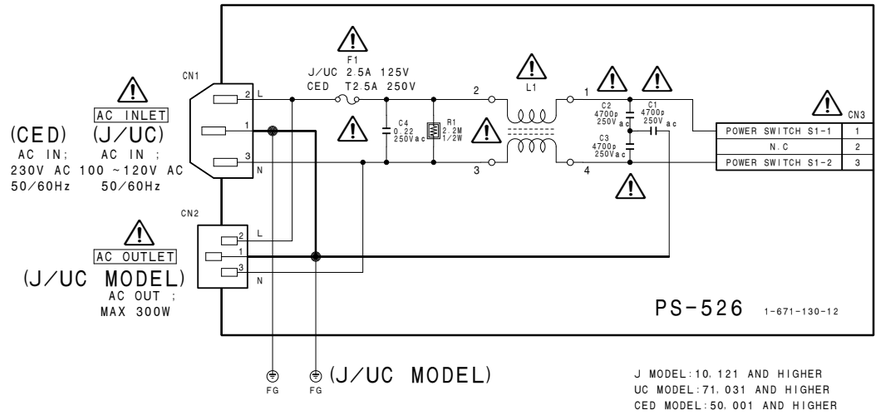
J MODEL : 10,121 AND HIGHER
UC MODEL : 71,031 AND HIGHER
CED MODEL : 50,001 AND HIGHER



PS-526 - A SIDE -
SUFFIX : -12



PS-526 - B SIDE -
SUFFIX : -12



PS-526

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer :

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

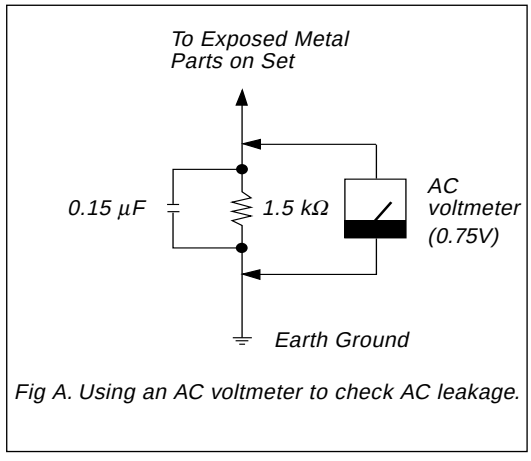

Fig A. Using an AC voltmeter to check AC leakage.

VID-P110 (J, UC, CE) J, E
9-955-161-01

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